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## The Australian species of *Dolichocheza* CURTIS (Diptera: Tipulidae)

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**Abstract:** The Australian species of the genus *Dolichocheza* CURTIS are reviewed. For the time being they all are assigned to *Dolichocheza* s. str. Lectotypes are designated for seven species. One taxon previously regarded as a subspecies is given full specific rank, and one species is synonymized. In total 28 previously described species are recognized. The males of two of those species previously known only from the female, and the females of three of those species previously known only from the male, are introduced, and 18 species are described as new. A key is presented to species groups as recognized in this paper (males only).

**Key - words:** *Dolichocheza*, revision; Australian species.

### Introduction

The first description of an Australian species of *Dolichocheza* CURTIS was presented by MACQUART (1846) under *Apeilesis cinerea*. To this SKUSE (1890) added seven more species, and ALEXANDER (1920, 1924, 1928a, 1928b, 1930, 1934, 1937, 1944) contributed another 19 taxa of the species group. However, only SKUSE (1890) provided illustrations, for four of his species. DOBROWORSKY (1974) revised the Australian members of *Dolichocheza*. He (DOBROWORSKY 1974) synonymized one of ALEXANDER'S species, attributed full specific rank to one of ALEXANDER'S subspecies, re-described all previously known species which he recognized, and described three more species. DOBROWORSKY also pointed out that the male hypopygia provide the only sure basis for specific identification in Australian *Dolichocheza* and that only some hypopygial features are useful and sometimes even these are inadequate because of their variability.

DOBROTORSKY (1974) illustrated wings and male gonostyli of most species, but the male gonostyli were illustrated mostly from considerably distorted slide specimens which are very hard to interpret. This led to some misinterpretation. DOBROTORSKY found it impossible to construct a useful key to species and made no attempt to subdivide the genus.

When I became interested in Australian *Dolichopeza* in 1979, the available literature gave me no confidence for any specific identifications. Studying the existing slide collections of the ANIC, MV and NMNH (formerly Alexander Collection) and dissection much fresh material, however, enabled me to interpret most Australian *Dolichopeza* species and to present this revision.

### Methods

In the following, all known Australian species of *Dolichopeza* are grouped and keyed to species groups mainly on the basis of characters of the male hypopygium. The species known prior to this paper are then treated briefly by supplying only essential details and references, whereas the new species are described and treated in more detail.

The distributions have been related to regions as recognized on broadly ecological grounds but given arbitrary boundaries for practical reasons, as outlined by WATSON (1974) (see Fig. 1).

Identifications of Australian *Dolichopeza* (males only) should now be possible by using the key to the species groups and the detailed diagnoses and illustrations. However, the male hypopygia of the material to be identified have to be cleared (in KOH) and to be displayed in liquid (glycerol) for reliable results.

### Acknowledgements

Over the years this study was supported in various ways by the following people: Prof. Dr R.L. Kitching (Brisbane), Ms E. Bugledich, Dr D.H. Colless, Dr P. Cranston, Ms Z. Liepa (all Canberra); Mr G. Williams (Lansdowne); Dr A. Neboiss, Mr K. Walker (both Melbourne); Mr M. Ball, Dr D.J. Bickel, Mr M.S. Moulds, Mr L. Müller, Mr N. Müller, Mr K. Riess jun. (all Sydney); Dr. G.W. Byers (Lawrence, U.S.A.); Dr. N. Evenhuis (Honolulu, U.S.A.); Dr. E.N. Savtshenko (Kiew, Ukraine); Dr. F. Speta (Linz, Austria). Their help is greatly appreciated.

I am, however, particularly grateful to the late Dr. C.P. Alexander who made available any information and material needed by a beginner and thus got this study started in 1981.

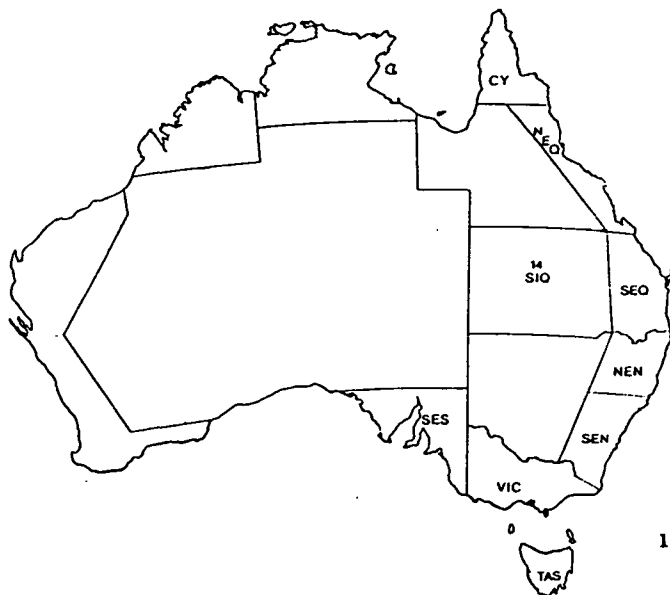


Fig. 1. Map of Australia showing the known distribution of *Dolichochepeza* in Australia. Abbreviations of the regions, referred to under "Distribution" of the single taxa: CY = Cape York Peninsula; NEQ = north-eastern Queensland; SEQ = south-eastern Queensland; SIQ = southern inland Queensland; NEN = north-eastern New South Wales; SEN = south-eastern New South Wales; VIC = Victoria; TAS = Tasmania; SES = south-eastern South Australia.

## Abbreviations

Apart from abbreviations for geographical regions of Australia (given under Fig. 1) and for morphological terms (given under Figs 9-12), the following abbreviations are used in this paper:

### a) for taxonomic terms

n. sp. = new species

stat. nov. = new status

### b) for authors

ALEX. = ALEXANDER

DOBR. = DOBROTWORSKY

MACQ. = MACQUART

**c) or institutions and collections**

AM = Australian Museum, Sydney

ANIC = Australian National Insect Collection, Canberra

BPBM = Bishop Museum, Honolulu, U.S.A.

DEI = Deutsches Entomologisches Institut, Berlin, Germany

GT = Collection Günther Theischinger

MNP = Museum National d'Histoire Naturelle, Paris, France

MST = Naturhistoriske Riksmuseum, Stockholm, Sweden

MV = Museum of Victoria, Melbourne

NMNH = National Museum of Natural History, Washington D.C., U.S.A.

QM = Queensland Museum, Brisbane

**d) others**

ca. = circa

Ck = Creek

dist. = district

ft = feet

km = kilometer(s)

m = meter

mi. = mile(s)

nr = near

Mt = Mount

Mtn = Mountain

Mts = Mountains

N.P. = National Park

R. = River

Ra. = Range

Rd = Road

Ref. = Refuge

Res. = Reserve

S.F. = State Forest

s.l. = same locality

S.U.Zool.Exp. = Zoological Expedition of the University of Sydney

## Systematics

### Genus *Dolichopeza* CURTIS (Figs 1-147)

*Dolichopeza* CURTIS, British Entomology 3: 52 (1825).

Type species: *Tipula albipes* STROM 1768, by original designation.

Only one subgenus in Australia:

*Dolichopeza* CURTIS.

### Subgenus *Dolichopeza* CURTIS (Figs 1-147)

*Dolichopeza* CURTIS, British Entomology 3: 52 (1825).

*Apeilesis* MACQUART, Mem. Soc. Sci. Agric. Lille: 136 (1846).

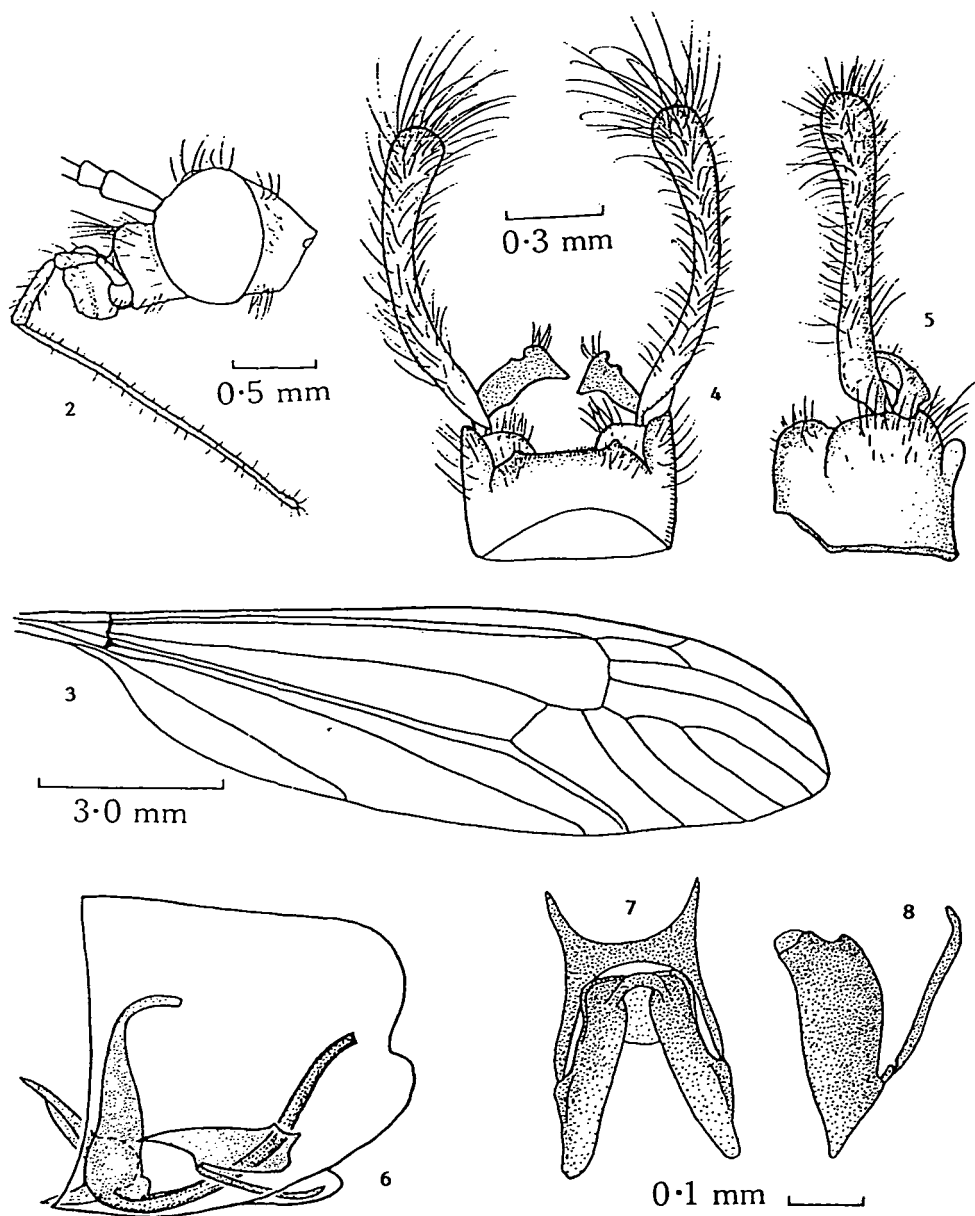
Type species of *Dolichopeza* CURTIS: *Tipula albipes* STRÖM 1768, by original designation. Type species of *Apeilesis* MACQUART: *Apeilesis cinerea* MACQUART 1846, by monotypy.

**Definition:** Rostrum short, nasus small or lacking. Palps with terminal segment long, flagelliform (Fig. 2). Antennae 13 segmented, longer in male than in female; flagellar segments cylindrical, gradually decreasing in length, with stiff setae. Legs very long and slender; tibiae with minute spurs; femora and tibiae about equal in length; tarsi very long, their basal segment often longer than femur and tibiae together. Wing (Fig. 3): Sc joining R close to base of Rs; Rs very short; Sc1 atrophied; M appears pectinate; bscu well before fork of M; dm absent. Abdomen slender, shorter than wing. Male hypopygium (Figs 4-8): gonocoxite completely fused with sternite 9; two pairs of gonostyli, the outer usually larger than the inner; adminiculum articulated on its sternal side to two rods, distal ends of which usually connect to sternum near its margin; these rods joining to each other near mid-length or at distal ends. Ovipositor with cerci long and straight and hypogynial valves appearing shorter.

It appears quite possible that future phylogenetic analyses of *Dolichopeza* CURTIS and related genera will show that none of the Australian species belong to *Dolichopeza* s. str. In that case *Apeilesis* MACQUART will have to be resurrected from synonymy, and possibly new subgenera will have to be established for some or all of the species groups defined below.

**Habitats:** According to ALEXANDER (1931) the larvae of some of the abundant species of Australian *Dolichopeza* may be expected on vertical faces of cliffs or rocks, in or beneath a scum of algal growth, with percolating or trickling water or in or beneath wet to saturated mats or cushions of mosses and liver-worts, growing on earth or rocks, generally near streams.

According to DOBROWORSKY (1974) the adults are found in damp situations such as tree-fern gullies, and are particularly common in hollow trees and stumps and in artificial containers such as tins and drums lying on the ground.



Figs 2-8. *Dolichozepe* (*Dolichozepe*) species, male: 2, head; 3, wing; 4, 5, hypopygium: 4, dorsal aspect; 5, lateral aspect; 6, sketch of segment 9, showing the position of aedeagus (ae) and adminiculum (ad), lateral aspect; 7, 8, adminiculum: 7, dorsal aspect; 8, lateral aspect (all from DOBROTORSKY 1974, some slightly modified).

Even though collecting of adults covering the habitats mentioned by ALEXANDER (1931) and DOBROWORSKY (1974) was quite successful for myself and for other collectors, samples obtained by fogging from the rainforest canopy on Cape Tribulation and on Green Mountain (Lamington National Park) contained several species which have never been encountered in traditional situations and by traditional sampling methods. This perhaps indicates yet other habitats for *Dolichopeza* in Australia.

**Distribution:** North America, Europe, Africa, southern and eastern Asia, New Guinea, Australia, New Zealand (BYERS 1961, SAVTSHENKO 1983).

**Distribution in Australia:** Eastern (including Tasmania).

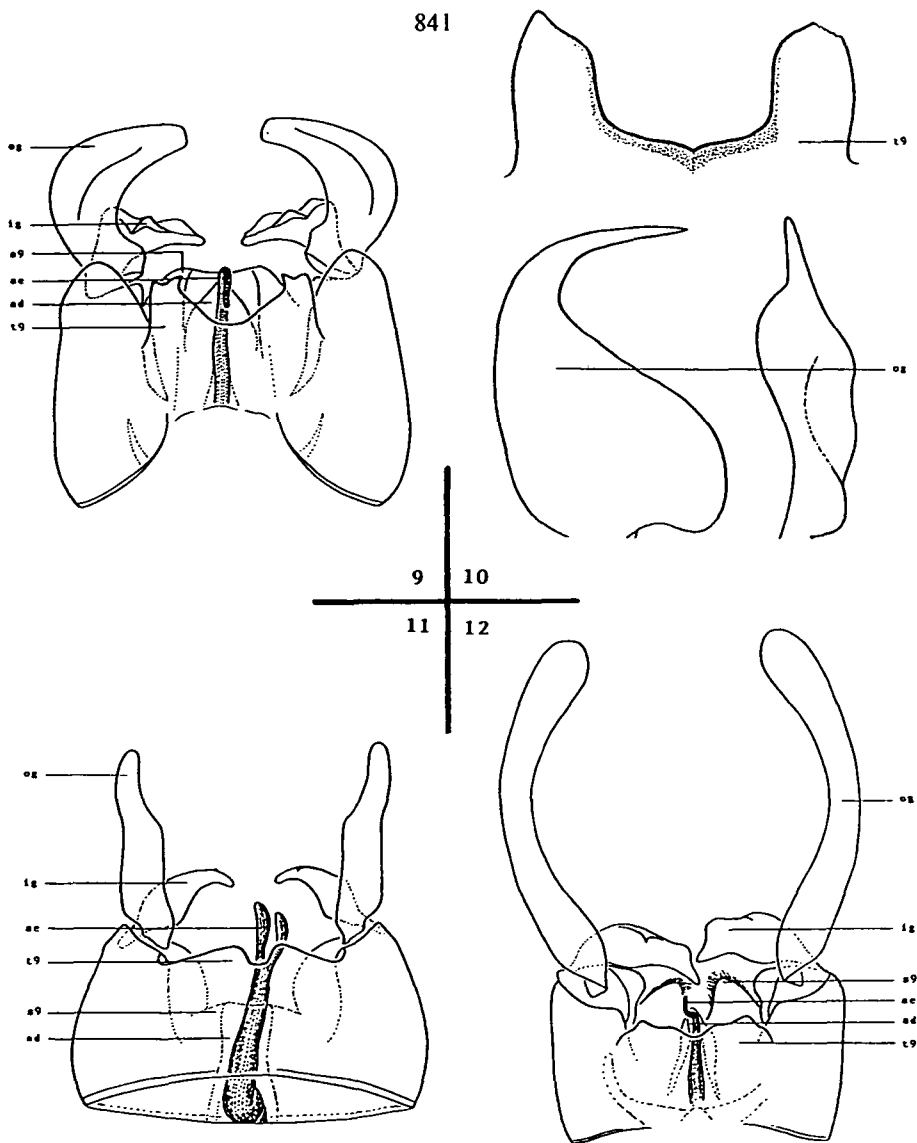
The species groups of *Dolichopeza* (*Dolichopeza*) in Australia:

- D. (D.) annulipes* group
- D. (D.) brevifurca* group
- D. (D.) cinerea* group
- D. (D.) collessi* group
- D. (D.) danbulla* group
- D. (D.) davidsoni* group
- D. (D.) ferox* group
- D. (D.) niveitarsis* group
- D. (D.) varipes* group
- D. (D.) yourula* group
- D. (D.)* species of uncertain affinities

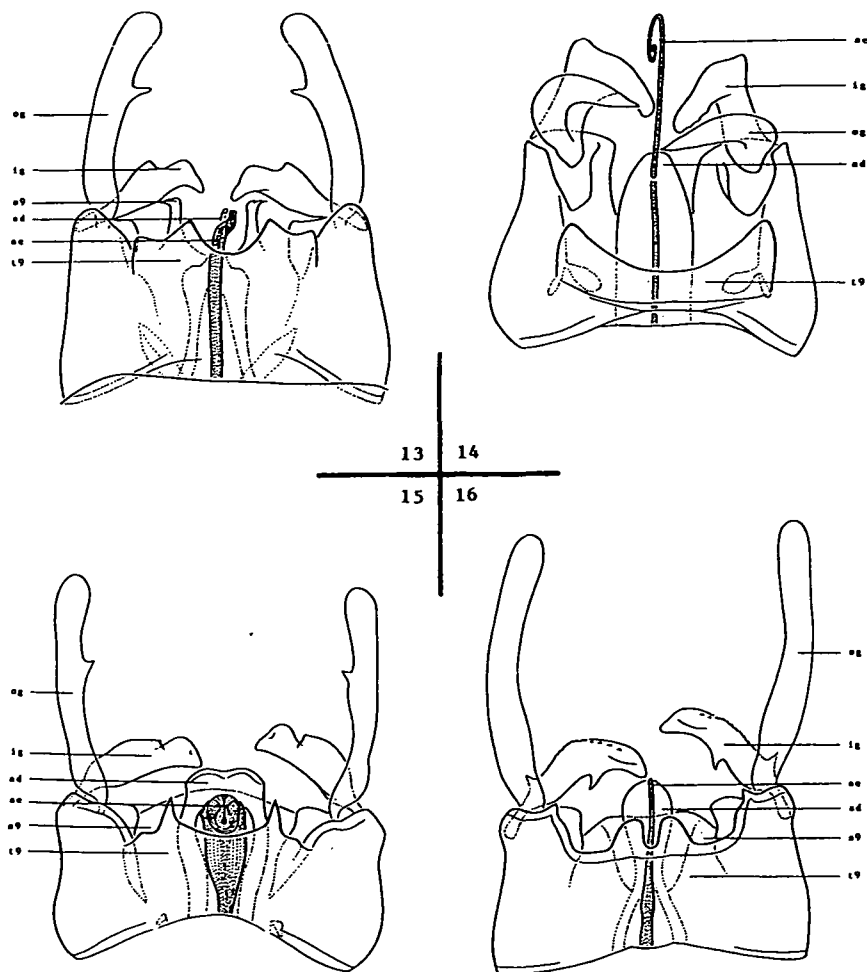
**Key to the species groups of Australian *Dolichopeza* (*Dolichopeza*) (males only) as recognized in this paper (Figs 9-20)**

- 1 Outer gonostylus (og) flattened and much larger than inner gonostylus (ig) (Figs 9, 10) ..... 2
- Outer gonostylus (og) not flattened and not much larger than inner gonostylus (ig) (Figs 11-20) ..... 3
- 2(1). Apex of outer gonostylus (og) rounded (Fig. 9) ..... *D. (D.) collessi* group
- Apex of outer gonostylus (og) pointed (Fig. 10) ..... *D. (D.) ferox* group
- 3(1). Apex of aedeagus (ae) profoundly bifid; adminiculum (ad) vestigial (Fig. 11) ..... *D. (D.) davidsoni* group

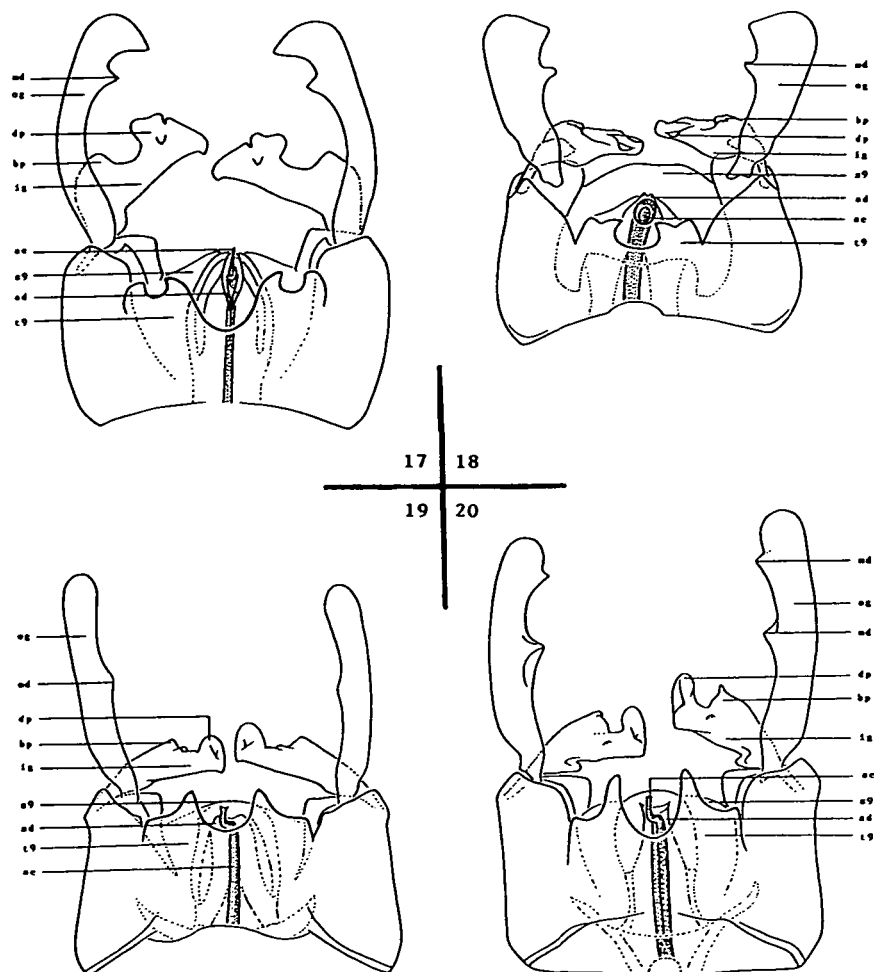
- Apex of aedeagus (ae) not profoundly bifid; adminiculum (ad) well developed (Figs 12-20) ..... 4
- 4(3). Sternite 9 (s9) produced into distinct pair of lobes (Figs 12, 13) ..... 5
- Sternite 9 (s9) not produced into distinct pair of lobes (Figs 14-20) ..... 6
- 5(4). Lobes of sternite 9 (s9) unarmed (Fig. 12) ..... *D. (D.) cinerea* group
- Lobes of sternite 9 (s9) bearing thick apical bristle(s) or spine(s) (Fig. 13) ..... *D. (D.) danbulla* group
- 6(4). Outer gonostylus (og) strongly curved, not sausage-shaped, or, if not strongly curved, inner gonostylus (ig) strongly bowed and longer than outer gonostylus; aedeagus (ae) generally long, thin, tubular, its curvature not rigid (Fig. 14) ..... *D. (D.) annulipes* group
- Outer gonostylus (og) straight or slightly curved, more or less sausage-shaped; inner gonostylus (ig) not strongly bowed and never longer than outer gonostylus; aedeagus (ae) not tubular, its curvature rigid (Figs 15-20) ..... 7
- 7(6). Outer gonostylus (og) sausage-shaped and with single mesal denticle (md) at about 2/3 length; aedeagus (ae) with apex very strongly expanded (Fig. 15) ..... *D. (D.) yourula* group
- Outer gonostylus (og) either sausage-shaped or sausage-shaped and apically expanded, with or without mesal denticles (md); apex of aedeagus (ae) not very strongly expanded (Figs 16-20) ..... 8
- 8(7). Outer gonostylus (og) without mesal denticles; inner gonostylus (ig) not forming distinct basal and distal portion (Fig. 16) ..... *D. (D.) niveitarsis* group
- Outer gonostylus (og) with at least one mesal denticle (md); inner gonostylus (ig) forming distinct basal (bp) and distal portion (dp) (Figs 17-20) ..... 9
- 9(8). Outer gonostylus apically expanded and subapically with pair of mesal denticles (Figs 17,18) ..... *D. (D.) varipes* group
- Outer gonostylus (og) apically not expanded, single mesal denticles (md) in various positions (exceptionally only indicated: *planidigitalis*) (Figs 19, 20) ..... *D. (D.) brevifurca* group



Figs 9-12. Male hypopygium (dorsal aspect) of Australian *Dolichozepe* (*Dolichozepe*) species, representing the species groups as recognized in this paper: 9, *D. (D.) collessi* n. sp. (= *collessi* group); 10, *D. (D.) ferox* ALEX. (= *ferox* group); 11, *D. (D.) davidsoni* ALEX. (= *davidsoni* group); 12, *D. (D.) tyilye* n. sp. (= *cinerea* group). Abbreviations (for Figs 9-20): ad = adminiculum; ae = aedeagus; bp = basal portion; dp = distal portion; ig = inner gonostylus; md = mesal denticle(s); og = outer gonostylus; s9 = sternite 9; t9 = tergite 9.



Figs 13-16. Male hypopygium (dorsal aspect) of Australian *Dolichopeza* (*Dolichopeza*) species, representing the species groups as recognized in this paper: 13, *D. (D.) danbulla* n. sp. (= *danbulla* group); 14, *D. (D.) geometrica* n. sp. (= *annulipes* group); 15, *D. (D.) yourula* n. sp. (= *yourula* group); 16, *D. (D.) thowla* n. sp. (= *niveitarsis* group). For abbreviations see above, under Figs 9-12.



Figs 17-20. Male hypopygium (dorsal aspect) of Australian *Dolichozepe* (*Dolichozepe*) species, representing the species groups as recognized in this paper: 17, *D. (D.) leonardi* n. sp. (= *varipes* group); 18, *D. (D.) minnamurra* n. sp. (= *varipes* group); 19, *D. (D.) planidigitalis* SKUSE (= *brevifurca* group); 20, *D. (D.) albescens* ALEX. (= *brevifurca* group). For abbreviations see above, under Figs 9-12.

***Dolichocheza (Dolichocheza) annulipes* group (Figs 14, 21-48)**

**Definition:** Male hypopygium (Fig.14): tergite 9 (t9) posteriorly straight or concave, generally without any distinct narrow lobes or processes, only the postero-lateral angles may be produced; sternite 9 not produced into distinct pair of lobes; outer (og) and inner gonostylus (ig) usually subequal in length, never sausage-shaped; apex of aedeagus (ae) variable; adminiculum (ad) well developed.

**Distribution in Australia:** Eastern (excluding Tasmania).

**Australian species:**

- D. (D.) annulipes* SKUSE
- D. (D.) bickeli* n. sp.
- D. (D.) dorrigensis* ALEX.
- D. (D.) geometrica* n. sp.
- D. (D.) kurandensis* ALEX.
- D. (D.) monticola* SKUSE
- D. (D.) oresitropha* ALEX.
- D. (D.) spetai* n. sp.
- D. (D.) subannulipes* ALEX.
- D. (D.) tropica* n. sp.

***Dolichocheza (Dolichocheza) annulipes* SKUSE (Figs 21-23)**

*Dolichocheza annulipes* SKUSE, Proc. Linn. Soc. N.S.W. (2) 5: 61 (1890).

*Dolichocheza (Dolichocheza) annulipes* SKUSE; ALEXANDER, Proc. Linn. Soc. N.S.W. 69: 4 (1944).

**Primary type:** Lectotype ♂, by present designation: Middle Harbour near Sydney, no further data (ANIC); seen; additionally labelled "Lectotype ♂ *Dolichocheza annulipes* SKUSE, designated by G. Theischinger 1993".

**Published records:** Queensland: Lamington N.P. (DOBROTORSKY 1974: 3). New South Wales: Lawson, Blue Mts; Middle Harbour and Neutral Bay, nr Sydney (both SKUSE 1890: 61). Victoria: Millgrove, nr Yarra R., 450 ft (ALEXANDER 1944: 4).

**Previous illustrations:** DOBROTORSKY 1974: Fig. 1 (gonostyli), Fig. 22 (wing).

**Genitalia:** Male hypopygium, Figs 21-23.

**Remarks:** Very similar to, but specifically distinct from, *D. oresitropha*

**ALEX.** Diagnostic characters: tergite 9 of male posteriorly with simple wide V-shaped median excision; outer gonostylus markedly longer than inner gonostylus; adminiculum connected to bilobed hairy cushion.

**New records:** Queensland: Coomera R., Lamington N.P., 1200 ft (ANIC); Cunningham Gap (GT); Gindie R., Fernless (GT); Lamington N.P. (UQ); Mt Tamborine (GT). New South Wales: Berowra (GT); Berowra Ck (GT); Brindle Ck, Wiangaree S.F. (GT); Ebor Falls (GT); Fitzroy Falls, 2500ft (ANIC); Galston Gorge (GT); Gordon, N of Sydney (GT); Heathcote Brook, Royal N.P. (GT); Kanangra Brook (GT); Kanangra Walls (GT); Lucas Heights (GT); Minnamurra Falls (GT, MV); Mongarlowe R., nr Clyde Mtn (ANIC); Mt Dromedary (GT); Nowra (GT); Rocky Crossing (GT); Somersby Falls, nr Gosford (GT); Styx R. (GT); Terania Ck (GT); Upper Allyn R. (ANIC); Upper Hastings R., Werrikimbi N.P. (GT); Upper Horton R. (GT); Washpool Ck, NNO of Tenterfield (GT); Waterfall, Royal N.P. (GT); Yadboro Ck, Budawang Ra. (GT). Victoria: Beehive Ck, 30 km N of Cann R. (MV); Erinundra Ck, 15 km N of Club Terrace (ANIC); Inverleigh (MV); Millgrove (ANIC).

**Distribution:** Queensland (SEQ), New South Wales (NEN, SEN), Victoria.

***Dolichopeza (Dolichopeza) oresitropa* ALEXANDER, stat. nov.**

**(Figs 24-26)**

*Dolichopeza annulipes oresitropa* ALEXANDER, Proc. Linn. Soc. N.S.W. 53: 55 (1928).

*Dolichopeza (Dolichopeza) annulipes oresitropa* ALEXANDER; DOBROWORSKY, Aust. J. Zool., Suppl. Ser. 32: 3 (1974).

**Primary type:** Holotype ♂: New South Wales, Barrington Tops, Jan. 1925, S.U.Zool.Exp. (ANIC); seen.

**Published records:** New South Wales: Barrington Tops (ALEXANDER 1928a: 55).

**Previous illustrations:** DOBROWORSKY 1974: Fig. 2 (gonostyli), Fig. 23 (wing).

**Genitalia:** Male hypopygium, Figs 24-26.

**Remarks:** Very similar to, but specifically distinct from, *D. annulipes*

**SKUSE.** The two species were found to coexist in the Barrington Tops area and at Ebor Falls. Diagnostic characters: tergite 9 of male with wide and additionally narrow U-shaped median excision; outer gonostylus markedly shorter than inner gonostylus; adminiculum connected to simple hairy cushion.

**New records:** New South Wales: Barrington Tops (GT); Barrington Tops, 1400 m (GT); Ebor Falls (GT); Gloucester Tops, 1300 m (GT).

**Distribution:** New South Wales (NEN).

***Dolichopeza (Dolichopeza) bickeli* n. sp. (Figs 27-29)**

**Description:** Head largely pale and dark greyish brown, including flagellum and distal segment of palpus; rostrum, basal segments of palpus, vertex, scape and pedicel greyish- to brownish yellow. Terga of synthorax greyish brown, except for yellow patch each side of prescutum; pleura pale greyish yellow with two dark greyish brown stripes, one adjacent to terga across dorsal edge of anepisternum and anepimeron and including areas anteroventral of wing base and at base of halter, and one across and including pronotum and part of katepisternum and meron. Coxae greyish yellow, pro- and mesocoxa with greyish brown basal patch; trochanters greyish yellow, pro- and mesotrochanter with dark distal mark; femora greyish yellow at base, otherwise greyish- to blackish brown with extreme apex yellow; tibiae yellow at extreme base, otherwise blackish brown; basal segment of tarsi blackish brown except for apical ca. 1/5 in pro-, ca. 1/4 in meso- and ca. 1/3 in metatarsus, which are greyish yellow; other tarsal segments whitish yellow. Wing venation greyish brown; membrane hyaline, slightly suffused with brown; pterostigma blackish brown, a spot adjacent to its proximal side and a spot adjacent to its distal side whitish hyaline; M1 hardly longer than M1+2; anal angle widely rounded. Halter with greyish yellow stem and greyish brown knob. Abdomen blackish brown and greyish yellow to dark yellowish brown; tergites largely blackish brown, 1, 2 and 6-8 with pale greyish yellow patch each side, 2-5 with dull yellow cross-band.

**Dimensions:** Wing length, male 7,5-9,0 mm, female 8,7 mm.

**Genitalia:** Male hypopygium, Figs 27-29.

**Remarks:** Most similar to *D. subannulipes* ALEX., similar to *D. geometrica* n. sp. and *D. tropica* n. sp. Diagnostic characters: tergite 9 of male posteriorly concave; inner gonostylus evenly curved, outer gonostylus boot-shaped.

**Material examined:** Holotype ♂: New South Wales, 5 km S Comboyne, U. Lansdowne Escarp., rainforest, yellow pan, 6.12.1988, D. Bickel (AM). Paratypes: New South Wales: 1♀, same data as holotype (AM); 1♂, Dorrigo National Park, Glades Area, subtropical rainforest, 7-8.1.1988, D.J. Bickel (GT); 1♂, Lorient Ref., 3 km N Lansdowne, nr Taree, rainforest margin, malaise trap, 27.9-4.10.1987, 1♂, s.l., 4-11.10.1987, 1♂, s.l., 11-18.10.1987, 1♂, s.l., 8-15.11.1987, 1♂, s.l., 14-21.2.1988, 1♂, s.l., 23-30.3.1988, G. Williams (GT); 1♂, Styx River State Forest, 800 m, 16.11.1992, G. Theischinger (GT).

**Distribution:** New South Wales (NEN).

**Name:** Dedicated to Dr D.J. Bickel (Sydney) who collected part of the type material.

### *Dolichopeza (Dolichopeza) subannulipes* ALEXANDER (Figs 30-32)

*Dolichopeza (Dolichopeza) subannulipes* ALEXANDER, Ann. Mag. nat. Hist. (10) 13: 245 (1934).

**Primary type:** Holotype ♂: New South Wales, Wentworth Falls, Blue Mountains, 20-30.10.1930, F.E. Wilson (MV); seen.

**Published records:** New South Wales: Wentworth Falls, Blue Mts (ALEXANDER 1934: 247).

**Previous illustrations:** DOBROWORSKY 1974: Fig. 18 (gonostyli), Fig. 38 (wing).

Previously known only from male.

**Description of female:** Colouration and wing venation much as in male (ALEXANDER 1934).

**Dimensions:** Wing length 8,6-8,8 mm.

**Genitalia:** Male hypopygium, Figs 30-32.

**Remarks:** Most similar to *D. bickeli* n. sp., similar to *D. geometrica* n. sp. and *D. tropica* n. sp. Diagnostic characters: tergite 9 of male shallowly excised between postero-lateral angles; outer gonostylus almost straight; inner gonostylus with base strongly enlarged; aedeagus very thin and extremely long.

**New records:** New South Wales: Kuringai Chase, N of Sydney (GT); Macquarie Pass (GT); Spencer, N of Sydney (GT); Watagan Forest, nr Morriset (GT); Watagan S.F. (GT).

**Distribution:** New South Wales (SEN).

***Dolichopeza (Dolichopeza) geometrica* n. sp. (Figs 14, 33-35)**

**Description:** Head greyish brown, including flagellum and distal segment of palpus; rostrum, basal segments of palpus, vertex, scape and pedicel pale greyish yellow. Synthoracic terga greyish brown except for a dull yellow patch each side of prescutum; pleura pale greyish yellow with two dark greyish brown stripes, one adjacent to terga across dorsal edge of anepisternum and anepimeron and including areas anteroventral of wing base and at base of halter, and one across and including pronotum and part of katepisternum and meron. Coxae and trochanters greyish yellow, pro- and mesocoxa with greyish brown basal patch, pro- and mesotrochanter with dark distal mark; femora pale to dark greyish brown; tibiae greyish brown with extreme base yellow and apex of metatibia pale greyish yellow; basal segment of pro- and mesotarsus largely greyish brown, only apex and other tarsal segments greyish- to whitish yellow; basal segment of metatarsus largely brown, paler basally and distally, other tarsal segments greyish- to whitish yellow. Wing venation greyish brown; membrane hyaline, slightly suffused with brown; pterostigma dark greyish brown, a spot adjacent to its distal side whitish hyaline; M1 only slightly longer than M1+2; A2 very close to wing margin, anal angle hardly developed. Halter with yellowish grey stem and greyish brown knob. Abdomen greyish brown and greyish yellow; tergites largely greyish brown, 2 and 6-8 with greyish yellow patch each side, 2-5 with greyish yellow cross-band which may be divided along midline in female.

**Dimensions:** Wing length, male 6,3-7,5 mm, female 7,3-7,7 mm.

**Genitalia:** Male hypopygium, Figs 14, 33-35.

**Remarks:** Most similar to *D. tropica* n. sp., similar to *D. bickeli* n. sp. and *D. subannulipes* ALEX. Diagnostic characters: tergite 9 of male posteriorly concave; inner gonostylus shoe-shaped, outer gonostylus sickle-shaped or more similar to inner gonostylus but pointed.

**Material examined:** Holotype ♂: Queensland, Lamington National Park, Green Mountain, Earthwatch Australia (ANIC). Paratypes: Queensland: 2♂, 1♀, same data as holotype (ANIC, GT). New South Wales: 1♂, 1♀, Lorient Ref., 3 km N Lansdowne, nr Taree, rainforest margin, malaise trap, 22.-29.11.1987, G. Williams (GT).

**Distribution:** Queensland (SEQ), New South Wales (NEN).

**Name:** *Geometricus* 3 (= Latin for "geometrical") refers to the unusually regular shapes of the gonostyli.

***Dolichopeza (Dolichopeza) tropica* n. sp. (Figs 36-38)**

**Description:** Head largely pale greyish yellow, including rostrum, basal segments of palpus, vertex, scape, pedicel and along posterolateral margin of eyes, otherwise (including flagellum and distal segments of palpus) dark greyish brown. Synthoracic terga dark greyish brown; pleura pale yellow with two dark greyish brown stripes, one across and including area anteroventral to wing base, dorsal edge of anepisternum and anepimeron and area at base of halter, and one across and including pronotum and part of katapisternum and meron. Coxae and trochanters pale greyish yellow, pro- and mesocoxa with greyish brown basal patch, pro- and mesotrochanter with dark distal mark; remainder of legs largely greyish- to blackish brown, only extreme base of all tibiae, distal portion of pro- and mesotarsus, apex of metatibia and entire metatarsus white. Wing venation dark greyish brown; membrane hyaline, slightly suffused with greyish brown; pterostigma dark greyish brown and a spot adjacent to its distal side whitish hyaline; M1 and M1+2 subequal in length; A2 very close to wing margin. Halter with yellowish grey stem and dark greyish brown knob. Abdomen greyish brown and greyish- and brownish yellow; tergites largely greyish brown, 2-5 with brownish yellow cross-band at or beyond midlength.

**Dimensions:** Wing length, male 5,8-6,5 mm, female 7,1 mm.

**Genitalia:** Male hypopygium, Figs 36-38.

**Remarks:** Most similar to *D. geometrica* n. sp., similar to *D. bickeli* n. sp. and *D. subannulipes* ALEX. Diagnostic characters: tergite 9 of male posteriorly with wide V-shaped excision; both gonostyli rather evenly curved.

**Material examined:** Holotype ♂: Queensland, 17°20'S/145°31'E, Wongabel State Forest, Atherton, at light, 19.11.1981, D.H. Colless (ANIC). Paratypes: Queensland: 2♂♂, Cape Tribulation, 23-26.10.1980, G. Theischinger (GT); 4♂♂, 1♀, 15°50'S/145°20'E, Gap Creek, 5 km ESE Mount Finnigan, 15.5.1981, D.H. Colless (ANIC); 1♂, 1♀, Mossman Gorge, 19-25.11.1976, G. Theischinger (GT); 1♂, 15°47'S/145°14'E, Shiptons Flat, 17.5.1981, D.H. Colless (ANIC).

**Distribution:** Queensland (CY, NEQ).

**Name:** *Tropicus* 3 (= Latinized for "tropical") refers to the distribution.

***Dolichozepe (Dolichozepe) dorrigenensis* ALEXANDER (Figs 39-41)**

*Dolichozepe (Dolichozepe) dorrigenensis* ALEXANDER, Ann. Mag. nat. Hist. (10) 5: 138 (1930).

**Primary type:** Holotype ♀: New South Wales, Brooklana, East Dorrigo, ca. 2000 ft, 3.3.1928, W. Heron (NMNH); seen.

**Published records:** New South Wales: Brooklana, East Dorrigo, ca. 2000 ft (ALEXANDER 1930: 139).

**Previous illustrations:** DOBROWORSKY 1974: Fig. 29 (wing).

**Previously known only from female.**

**Description of male:** Colouration and wing venation much as in female (ALEXANDER 1930).

**Dimensions:** Wing length 6,2-7,7 mm.

**Genitalia:** Hypopygium, Figs 39-41.

**Remarks:** Possibly most similar to *D. kurandensis* ALEX., similar in some way to *D. spetai* n. sp. Diagnostic characters: tergite 9 of male with three posterior lobes; outer gonostylus much shorter than inner gonostylus.

**New records:** New South Wales: Barrington House (ANIC); 33 mi. Dorrigo-Coramba Rd (ANIC); Lorien Ref., 3 km N Lansdowne, nr Taree (GT); Watagan Forest, nr Morriset (GT). Victoria: E Gippsland, Club Terrace (ANIC).

**Distribution:** New South Wales (NEN, SEN), Victoria.

***Dolichopeza (Dolichopeza) kurandensis* ALEXANDER (Fig. 42)**

*Dolichopeza (Dolichopeza) kurandensis* ALEXANDER, Ann. Mag. nat. Hist. (10) 19: 332 (1937).

**Primary type:** Holotype ♂: Queensland, Kuranda, 1100ft, F.H. Taylor (ANIC); seen.

**Published records:** Queensland, Kuranda, 1100 ft (ALEXANDER 1937: 333).

**Previous illustrations:** DOBROWORSKY 1974: Fig. 10 (gonostyli), Fig. 30 (wing).

**Known only from male.**

**Genitalia:** Hypopygium (partly, from holotype slide), Fig. 42. Description (according to ALEXANDER 1937): Male hypopygium with the caudal margin of tergite 9 crenate into four lobes, the border heavily blackened and microscopically serrulate; lateral ventral lobes likewise heavily blackened and serrulate. Outer gonostylus unusually short, dusky in colour, not exceeding 2/3 total length of inner gonostylus, provided with long coarse setae that are approximately 1/2 length of the style itself. Inner gonostylus with apical half narrowed into a long dark-coloured beak.

**Remarks:** Possibly most similar to *D. dorrigensis* ALEX. Diagnostic characters: tergite 9 of male with four posterior lobes; outer gonostylus much shorter than inner gonostylus.

**New records:** None.

**Distribution:** Queensland (NEQ); known only from Kuranda.

***Dolichopeza (Dolichopeza) spetai* n. sp. (Figs 43-45)**

**Description:** Head largely brownish grey, including flagellum and distal segment of palpus; rostrum, basal segments of palpus, vertex, scape and pedicel whitish yellow. Synthoracic terga pale to dark brownish grey except for a greyish yellow patch each side of prescutum; pleura whitish yellow with two dark greyish brown stripes, one adjacent to terga across dorsal edge of anepisternum and anepimeron and including areas ventral to base of wing and halter, and one across and including pronotum and part of katepisternum and meron. Coxae whitish yellow, pro- and mesocoxa with

greyish brown basal patch; trochanters whitish yellow, pro- and mesotrochanter with dark distal mark; femora basally greyish yellow, otherwise greyish brown; tibiae yellow at extreme base, otherwise dark greyish brown; basal segment of tarsi greyish brown with distal portion of variable length whitish yellow; other tarsal segments yellowish white. Wing venation greyish brown; membrane hyaline, slightly suffused with greyish brown; pterostigma blackish brown, a spot adjacent to its proximal side and a spot adjacent to its distal side whitish hyaline; M1 and M1+2 subequal in length; anal angle hardly developed. Halter whitish yellow at base, stem otherwise greyish brown, knob brownish yellow and greyish brown. Abdomen pale and dark greyish brown and brownish- and pale greyish yellow; tergites largely dark greyish brown, 2-7 with pale brownish yellow patch each side.

**Dimensions:** Wing length, male 5,6-6,2 mm, female 6,2-6,9 mm.

**Genitalia:** Male hypopygium, Figs 43-45.

**Remarks:** In some way similar to *D. dorrigenis* ALEX. and possibly to *D. kurandensis* ALEX. Diagnostic characters: tergite 9 of male posteriorly with very short and wide subtriangular median lobe and small denticle each side close to the rounded postero-lateral angle.

**Material examined.** Holotype ♂: Queensland, Little Crystal Creek, nr Paluma, 25.11.1992, G. Theischinger, L. and N. Müller and F. Speta (AM). Paratypes: Queensland: 10♂♂, 8♀♀, same data as holotype (GT); 4♂♂, Cape Tribulation, 23.-26.10.1980, G. Theischinger (GT); 1♂, Mena Creek, near Mount Utchee, 17.11.1976, L. Müller and G. Theischinger (GT); 3♂♂, creeks from Mount Haigh into Tinaroo Dam, Nov. 1982, G. Theischinger and L. Müller (GT); 5♂♂, 5♀♀, Mossman Gorge, 19.-25.11.1976, G. Theischinger (GT).

**Distribution:** Queensland (NEQ).

**Name:** Dedicated to Dr Franz Speta (Linz, Austria) who assisted in collecting the type material.

### ***Dolichopeza (Dolichopeza) monticola* SKUSE (Figs 46-48)**

*Dolichopeza monticola* SKUSE, Proc. Linn. Soc. N.S.W. (2) 5: 63 (1890).

*Dolichopeza (Dolichopeza) monticola* SKUSE; DOBROTORSKY, Aust. J. Zool., Suppl. Ser. 32: 15 (1974).

**Primary type:** Lectotype ♂, by present designation: New South Wales, Mount Kembla, Illawarra district, Skuse (ANIC); seen; additionally labelled "Lectotype ♂ *Dolichocheza monticola* SKUSE, designated by G. Theischinger 1993".

**Published records:** New South Wales: Brooklana, 2000 ft (DOBROWORSKY 1974: 16); Mt Kembla, Illawarra dist. (SKUSE 1890: 63).

**Previous illustrations:** SKUSE 1890: Pl. VI, fig. 24 (male hypopygium); DOBROWORSKY 1974: Fig. 11 (gonostyli), Fig. 31 (wing).

**Genitalia:** Male hypopygium, Figs 46-48.

**Remarks:** Somewhat similar to *D. spetai* n. sp. Diagnostic characters: tergite 9 of male with posterior margin almost straight; both gonostyli curved, the outer shorter than the inner; apex of aedeagus markedly expanded.

**New records:** Queensland: Coomera R., Lamington N.P., 1200ft (ANIC); Cunningham Gap, 2500 ft (ANIC); Finch Hatton Gorge (GT); Goomburra Forest Park (GT); Killamey Falls (GT); Lamington N.P. (Tooloona, Canungra, Morans) (GT); Lobster Ck, nr Kenilworth (GT); Mt Tamborine (ANIC, GT). New South Wales: Berowra, N of Sydney (GT); small ck nr Berowra (GT); Brindle Ck, Wiangaree S.F. (GT); Cockera-wombeeba (GT); Coombadja Ck, Washpool N.P. (GT); Dorrigo N.P. (GT); Galston Gorge (GT); Macquarie Rivulet (GT); Minnamurra Falls (GT, MV); Mt Keira (GT); Rocky Crossing, Barrington Tops (GT); Somersby Falls (GT); Terania Ck (GT); Tuglo, 33 km N of Singleton (GT); Wilson R. Res., 15 km NW Bellangry, 244 m (GT).

**Distribution:** Queensland (NEQ, SEQ), New South Wales (NEN, SEN).

### *Dolichocheza (Dolichocheza) brevifurca* group (Figs 19, 20, 49-66)

**Definition:** Male hypopygium (Figs 19, 20): tergite 9 (t9) with one pair of distinct narrow and rather long posterior lobes or processes (posterolateral angles not included); sternite 9 (s9) not produced into distinct pair of lobes; outer gonostylus (og) sausage-shaped, mostly with two single mesal denticles (md) and usually about 50% longer than inner gonostylus (ig) which is forming two rather distinct portions, a basal (bp) and a distal one (dp); apex of aedeagus (ae) slender, not expanded; adminiculum (ad) well developed.

**Distribution in Australia:** Eastern (including Tasmania).

**Australian species:**

*D. (D.) albescens* ALEX.

*D. (D.) boogoo* n. sp.

*D. (D.) brevifurca* SKUSE

*D. (D.) pallidula* ALEX.

*D. (D.) planidigitalis* SKUSE

*D. (D.) queenslandica* ALEX.

***Dolichocheza (Dolichocheza) brevifurca* SKUSE (Figs 49-51)**

*Dolichocheza brevifurca* SKUSE, Proc. Linn. Soc. N.S.W. (2) 5: 66 (1890).

*Dolichocheza (Dolichocheza) fusciradialis* ALEXANDER, Ann. Mag. nat. Hist. (10) 13: 241 (1934).

*Dolichocheza (Dolichocheza) brevifurca* SKUSE; ALEXANDER, Proc. Linn. Soc. N.S.W. 69: 5 (1944).

**Primary types:** Lectotype ♂, by present designation, of *D. brevifurca* SKUSE: New South Wales, Wagga Wagga, Oct., Skuse (ANIC); seen; additionally labelled "Lectotype ♂ *Dolichocheza brevifurca* SKUSE, designated by G. Theischinger 1993". Holotype ♂ of *D. fusciradialis* ALEXANDER: New South Wales, Sydney, 10.3.1912, R. Helms (NMNH); seen.

**Published records:** Queensland: Mt Lamington (DOBROWORSKY 1974: 5). New South Wales: Brown Mt (ALEXANDER 1944:5); Jindabyne, 3000 ft; Moonbar, 3500 ft, Mt Kosciusko; Wagga Wagga (all SKUSE 1890: 67); Sydney; Mt Wilson, Blue Mts (both ALEXANDER 1934: 242). Victoria: Mt Arapiles; You Yangs (both DOBROWORSKY 1974: 5). Tasmania: Strahan; Zeehan (both ALEXANDER 1944: 5).

**Previous illustrations:** DOBROWORSKY 1974: Fig. 4 (gonostyli), Fig. 24 (wing).

**Genitalia:** Male hypopygium, Figs 49-51.

**Remarks:** Most similar to *D. queenslandica* ALEX. A rather variable species, even in hypopygial characters (shape of tergite 9 and outer gonostylus). Diagnostic characters: outer gonostylus with subapical mesal denticle quite substantial to large and very close to apex; distal portion of inner gonostylus with apical angle obtuse.

**New records:** Queensland: Gwongorella N.P. (GT). New South Wales: Gibraltar Ra. (GT); Mt Kaputar (GT); Murrurundi (ANIC); The Rock (ANIC); Styx R. (GT); Wollomombi Falls (GT); Yarrowyck Mtn, Bundarra Rd (ANIC). Tasmania: Collinsvale, "Fairy Glen", 300 m (GT); Pieman Bridge (ANIC); Strahan (ANIC).

**Distribution:** Queensland (SEQ), New South Wales (NEN, SEN), Victoria, Tasmania.

***Dolichocheza (Dolichocheza) queenslandica* ALEXANDER (Figs 52-54)**

*Dolichocheza brevifurca queenslandica* ALEXANDER, Mem. Queensl. Mus. 7: 55 (1920).

*Dolichocheza (Dolichocheza) queenslandica* ALEXANDER; DOBROTORSKY, Aust. J. Zool., Suppl. Ser. 32: 21 (1974).

**Primary type:** Holotype ♂: Queensland, Oxley, near Brisbane, 4.9.1914, H. Hacker (QM); not seen.

**Published records:** Queensland: Brisbane; Oxley, nr Brisbane (both ALEXANDER 1920: 56).

**Previous illustrations:** DOBROTORSKY 1974: Fig. 17 (gonostyli), Fig. 37 (wing).

**Genitalia:** Male hypopygium, Figs 52-54.

**Remarks:** Most similar to *D. brevifurca* SKUSE. Diagnostic characters: subapical mesal denticle of outer gonostylus small and very close to apex; distal portion of inner gonostylus with apical angle not obtuse.

**New records:** Queensland: Ban Ban Ra., via Coalstoun Lakes (ANIC); Ban Ban Ra., via Coalstoun Lakes, SW of Biggenden (ANIC); Bancroft, Eidsvold (ANIC); Biggenden (ANIC); nr Biggenden, Geissler's scrub (ANIC); Bin Bin Ra., via Didcot, W of Biggenden (ANIC); Bluff Ra., foothills, Biggenden (ANIC); Coast Ra., via Rocky Ck, nr Biggenden (ANIC); Coongara Rock, W Bin Bin Ra., nr Biggenden (ANIC); The Pinnacles, Mt Walsh N.P., Bluff Ra., Biggenden (ANIC); Rockpool Gorge, W Bluff Ra., Biggenden (ANIC).

**Distribution:** Queensland (SEQ).

***Dolichocheza (Dolichocheza) planidigitalis* SKUSE (Figs 19, 55-57)**

*Dolichocheza planidigitalis* SKUSE, Proc. Linn. Soc. N.S.W. (2) 5: 65 (1890).

*Dolichocheza (Dolichocheza) planidigitalis* SKUSE; DOBROWORSKY, Aust. J. Zool., Suppl. Ser. 32: 19 (1974).

**Primary type:** Lectotype ♂, by present designation: New South Wales, Wheeny Creek, Hawkesbury district, Jan., F.A.A. Skuse (ANIC); seen; additionally labelled "Lectotype ♂ *Dolichocheza planidigitalis* SKUSE, designated by G. Theischinger".

**Published records:** New South Wales: Wheeny Ck, Hawkesbury dist. (SKUSE 1890: 65); Sydney; Tidbinbilla, A.C.T. (both DOBROWORSKY 1974: 20).

**Previous illustrations:** SKUSE 1890: Pl. VI, fig. 25 (male hypopygium); DOBROWORSKY 1974: Fig. 16 (gonostyli).

Previously known only from male.

**Description of female:** Colouration and wing venation much as in male (SKUSE 1890).

**Dimensions:** Wing length 10,0-11,4 mm.

**Genitalia:** Male hypopygium, Figs 19, 55-57.

**Remarks:** Very similar to *D. brevifurca* SKUSE and *D. queenslandica* ALEX. Diagnostic characters: outer gonostylus without subapical mesal denticle.

**New records:** New South Wales: Engadine (GT); Glenbrook N.P., nr Sydney (GT); Hawkesbury R., Brooklyn (ANIC); Sydney (ANIC); Valley Heights (AM).

**Distribution:** New South Wales (SEN).

***Dolichocheza (Dolichocheza) albescens* ALEXANDER (Figs 20, 58-60)**

*Dolichocheza (Dolichocheza) albescens* ALEXANDER, Ann. Mag. nat. Hist. (10) 19: 331 (1937).

**Primary type:** Holotype ♂: New South Wales, Sydney, Lüddemann (DEI; parts in NMNH); seen.

**Published records:** New South Wales: Sydney (ALEXANDER 1937: 331).

Previously known only from male.

**Description of female:** Colouration and wing venation much as in male (ALEXANDER 1937).

**Dimensions:** Wing length 11,1-11,3 mm.

**Genitalia:** Male hypopygium, Figs 20, 58-60.

**Remarks:** Similar to *D. brevifurca* SKUSE, *D. queenslandica* ALEX. and *D. planidigitalis* ALEX. Diagnostic characters: outer gonostylus with subapical denticle some distance from apex.

**New records:** New South Wales: Warrah (ANIC).

**Distribution:** New South Wales (NEN, SEN).

***Dolichopeza (Dolichopeza) pallidula* ALEXANDER (Figs 61-63)**

*Dolichopeza cinerea* (MACQUART); SKUSE, Proc. Linn. Soc. N.S.W. (2) 5: 64 (1890).

*Dolichopeza pallidula* ALEXANDER, Ann. Mag. nat. Hist. (10) 2: 338 (1928).

*Dolichopeza (Dolichopeza) pallidula* ALEXANDER; ALEXANDER, Proc. Linn. Soc. N.S.W. 69: 5 (1944).

**Primary type:** Holotype ♂: New South Wales, Botany Bay, 24.9.1904, R. Helms (NMNH); seen.

**Published records:** New South Wales: Botany Bay; Sydney; Wentworth Falls, Blue Mts (all ALEXANDER 1928b: 339); Cheltenham (DOBROTORSKY 1974: 19); Hornsby; Obelisk Bay, Sydney Harbour (both ALEXANDER 1944: 5).

**Previous illustrations:** DOBROTORSKY 1974: Fig. 14 (gonostyli), Fig. 36 (wing).

**Genitalia:** Male hypopygium, Figs 61-63.

**Remarks:** Similar to *D. albescens* ALEX., *D. brevifurca* SKUSE, *D. planidigitalis* SKUSE and *D. queenslandica* ALEX. Diagnostic characters: outer gonostylus with two denticles, one at about 1/3, the other at about 2/3 length of style.

**New records:** New South Wales: Annangrove (AM); Belmore Falls, Barrengarry R. (ANIC); Broken Bay (ANIC); Coalcliff (GT); Cowan Ck, Hawkesbury (ANIC); Engadine (GT); Glenbrook N.P., nr Sydney (GT); Heathcote Brook (GT); Minna Haha Falls, Katoomba, Blue Mts (GT); Tjanjarra Falls (GT); Wentworth Falls (ANIC).

**Distribution:** New South Wales (SEN).

***Dolichozepe (Dolichozepe) boogoo* n. sp. (Figs 64-66)**

**Description** (♂): Head largely dark greyish brown, including flagellum and basal segment of palpus; rostrum, remainder of palpus, vertex, scape and pedicel greyish- to brownish yellow. Thorax greyish yellow to pale greyish brown, terga somewhat darker than pleura. Coxae and trochanters greyish yellow, trochanters with dark distal mark; profemur greyish brown; protibia greyish brown to greyish yellow, extreme base dull yellow; basal segment of protarsus dark greyish yellow in basal ca. 1/3, pale greyish yellow in distal ca. 2/3, remainder of protarsus whitish yellow; other leg segments missing. Wing venation greyish brown; membrane hyaline, pterostigma greyish brown; M1 1 1/2 to 2 times the length of M1+2; A2 very close to wing margin, anal angle hardly developed. Halter greyish yellow at base, otherwise greyish brown. Abdomen greyish brown and greyish yellow; tergites largely greyish brown, 2-8 with pale greyish yellow patch each side.

**Dimensions**: Wing length 6,4-6,8 mm.

**Genitalia**: Hypopygium, Figs 64-66.

Female unknown.

**Remarks**: Somewhat isolated from the other species of the *D. brevifurca* group. Diagnostic characters: tergite 9 of male medially slightly bilobed and with small narrow lobe on top of postero-lateral angles; outer gonostylus long, club-shaped, with two small mesal denticles in basal 1/2 to 3/5.

**Material examined**: Holotype ♂: Queensland, Cape Tribulation, Earthwatch Australia (ANIC). Paratype: 1♂, same data as holotype, (GT).

**Distribution**: Queensland (NEQ); known only from the Daintree rainforest.

**Name**: Boogoo (= Australian Aboriginal word for "long club") refers to the outer gonostylus; to be treated as a noun in apposition.

***Dolichozepe (Dolichozepe) varipes* group (Figs 17, 18, 67-81)**

**Definition**: Male hypopygium (Figs 17, 18): tergite 9 (t9) with at least one pair of rather short pointed posterior lobes or processes (postero-lateral

angles not included); sternite 9 (s9) not produced into distinct pair of lobes; outer gonostylus (og) apically markedly expanded and subterminally with mesal pair of denticles; inner gonostylus (ig) forming two rather distinct portions, a basal (bp) and a distal one (dp); aedeagus (ae) variable; adminiculum (ad) well developed.

**Distribution in Australia:** Eastern (excluding Tasmania).

**Australian species:**

*D. (D.) berrimilla* n. sp.

*D. (D.) illingworthi* ALEX.

*D. (D.) leonardi* n. sp.

*D. (D.) minnamurra* n. sp.

*D. (D.) varipes* SKUSE

***Dolichopeza (Dolichopeza) varipes* SKUSE (Figs 67-69)**

*Dolichopeza varipes* SKUSE, Proc. Linn. Soc. N.S.W. (2) 5: 67 (1890).

*Dolichopeza (Dolichopeza) varipes* SKUSE; ALEXANDER, Proc. Linn. Soc. N.S.W. 69: 5 (1944).

**Primary type:** Lectotype ♂, by present designation: New South Wales, Knaps Gully (= Knapsack Gully), F.A.A. Skuse (ANIC); seen; additionally labelled "Lectotype ♂ *Dolichopeza varipes* SKUSE, designated by G. Theischinger 1993".

**Published records:** New South Wales: almost everywhere (SKUSE 1890: 68); Mt Victoria, Blue Mts (ALEXANDER 1944: 5). Knaps Gully, New England (DOBROWORSKY 1974: 25) is an error.

**Previous illustrations:** SKUSE 1890: Pl. IV, fig. 2 (wing); DOBROWORSKY 1974: Fig. 20 (gonostyli).

**Genitalia:** Male hypopygium, Figs 67-69.

**Remarks:** Most similar to *D. leonardi* n. sp. Diagnostic characters: postero-median excision of tergite 9 of male not much deeper than postero-lateral excisions; aedeagus moderately stout, not S-curved.

**New records:** New South Wales: Ebor Falls (GT); Kiwarra S.F., nr Taree, Breakneck Lookout (GT); Lorient Ref., 3 km N Lansdowne, nr Taree (GT); Mt Kaputar (GT); Upper Horton R. (GT).

**Distribution:** New South Wales (NEN, SEN).

***Dolichopeza (Dolichopeza) leonardi* n. sp. (Figs 17, 70-72)**

**Description:** Head largely greyish brown, including flagellum and basal segments of palpus; rostrum, distal segment of palpus, vertex, scape and pedicel greyish- to brownish yellow. Thoracic terga largely yellowish- to greyish brown, prescutum with somewhat darker longitudinal stripes and postscutum with large dark greyish brown patch each side; pleura greyish yellow. Coxae and trochanters greyish yellow, trochanters with dark distal mark; femora pale to dark greyish brown; tibiae yellow at extreme base, otherwise dark greyish brown, only metatibia with distal ca. 1/4 to 1/3 greyish yellow to yellowish white; basal segment of tarsi largely dark greyish brown, distal portion of variable length (longest in metatarsus) pale greyish to whitish yellow; other tarsal segments yellowish white. Wing venation yellowish- to greyish brown; membrane hyaline, slightly suffused with greyish yellow; pterostigma greyish brown; M1 slightly longer than M1+2; anal angle widely rounded. Halter with greyish yellow stem and greyish brown knob. Abdomen greyish brown, dark yellowish brown and greyish yellow; tergites largely greyish brown, 2-7 with greyish yellow cross-band.

**Dimensions:** Wing length, male 6,6-7,7 mm, female 7,4-8,3 mm.

**Genitalia:** Male hypopygium, Figs 17, 70-72.

**Remarks:** Most similar to *D. varipes* SKUSE. Diagnostic characters: postero-median excision of tergite 9 of male much deeper than postero-lateral excisions; aedeagus very slender, S-curved.

**Material examined:** Holotype ♂: Queensland, Carnarvon Gorge, Nov. 1990, G. Theischinger and L. Müller (AM). Paratypes: Queensland: 5 ♀, same data as holotype (GT); 1 ♀, Carnarvon Gorge, Nov.-Dec. 1976, 1 ♂, 1 ♀, s.l., 11-14.10.1980, 1 ♂, 2 ♀, s.l., 14.5.1990, G. Theischinger and L. Müller (GT).

**Distribution:** Queensland (SIQ); known only from Carnarvon Gorge.

**Name:** Dedicated to Mr Leonard Müller (Berowra) who assisted in collecting the type material.

***Dolichopeza (Dolichopeza) berrimilla* n. sp. (Figs 73-75)**

**Description (♂).** Head largely brown, including palpus; rostrum and scape greyish- to brownish yellow; pedicel and flagellum greyish- to

blackish brown. Prescutum largely greyish brown; scutellum and mediotergite pale yellowish grey; postscutum greyish yellow with large dark brownish grey patch each side; laterotergite and pleura greyish yellow; coxae greyish yellow; trochanters greyish yellow with dark distal mark; other leg segments missing. Wing venation yellowish- to greyish brown; membrane hyaline, slightly suffused with greyish yellow; pterostigma dark greyish brown; M1 not or only slightly longer than M1+2; A2 very close to wing margin, anal angle hardly developed. Halter with yellowish grey stem and greyish yellow to greyish brown knob. Abdomen greyish brown and greyish yellow; tergite 1 greyish yellow, other tergites largely greyish brown, 2-7 with greyish yellow cross-band or greyish yellow patch each side.

**Dimensions:** Wing length 6,7-7,5 mm.

**Genitalia:** Hypopygium, Figs 73-75.

Female unknown.

**Remarks:** Very similar to *D. illingworthi* ALEX. Diagnostic characters: tergite 9 of male with six distinct narrow projections along posterior margin (including postero-lateral angles).

**Material examined:** Holotype ♂: Queensland, Lamington National Park, Green Mountain, Earthwatch Australia (ANIC). Paratypes: New South Wales: 1♂, Lorient Ref., 3 km N Lansdowne nr Taree, rainforest, malaise trap, 15.-22.11.1987, G. Williams (GT); 1♂, Mount Hyland National Park, 15.11.1992, G. Theischinger (GT).

**Distribution:** Queensland (SEQ), New South Wales (NEN).

**Name:** Berrimilla (= Australian Aboriginal word for "kingfisher") refers to the crown-like outline of tergite 9 of the male; to be treated as a noun in apposition.

***Dolichopeza (Dolichopeza) illingworthi* ALEXANDER (Figs 76-78)**

*Dolichopeza (Dolichopeza) illingworthi* ALEXANDER, Ann. Mag. nat. Hist. (10) 5: 136 (1930).

**Primary type:** Holotype ♂: Queensland, Kuranda, Cairns district, 1100 ft, March 1921, A.P. Dodd (NMNH); seen.

**Published records:** Queensland: Kuranda, 1100 ft (ALEXANDER 1930: 137).

**Previous illustrations:** DOBROWORSKY 1974: Fig. 9 (gonostyli), Fig. 27 (wing).

Known only from male.

**Genitalia:** Hypopygium, Figs 76-78.

**Remarks:** Very similar to *D. berrimilla* n. sp. Diagnostic characters: tergite 9 of male with four distinct narrow projections (including postero-lateral angles) and a low transverse median lobe along posterior margin.

**New records:** Queensland: Mission Beach (GT); 17° 20'S/145° 31'E, Wongabel S.F., nr Atherton (ANIC).

**Distribution:** Queensland (NEQ).

***Dolichozepe (Dolichozepe) minnamurra* n. sp. (Figs 18, 79-81)**

**Description:** Head largely pale greyish- to brownish yellow, including rostrum, basal segment of palpus, scape and pedicel; flagellum and remainder of palpus blackish brown. Thorax pale greyish yellow to yellowish brown, terga somewhat darker than pleura. Coxae and trochanters pale greyish yellow, trochanters with dark distal mark; other leg segments missing. Wing venation greyish to blackish brown; membrane hyaline, pterostigma greyish brown; M1 markedly longer than M1+2; anal angle moderately projecting. Halter yellowish- to brownish grey. Abdomen pale brownish yellow to pale yellowish- and greyish brown without distinct pattern.

**Dimensions:** Wing length, male 7,3-7,5 mm, female 8,0 mm.

**Genitalia:** Male hypopygium, Figs 18, 79-81.

**Remarks:** Somewhat isolated from the other members of the group. Diagnostic characters: postero-median excision of tergite 9 of male narrow; outer gonostylus stout; aedeagus subterminally expanded.

**Material examined:** Holotype ♂: New South Wales, Minnamurra Falls, 29.1.1968, Z. Liepa (ANIC). Paratypes: 1♂, Kiwarrak State Forest, near Taree, Breakneck Lookout, dry rainforest, malaise trap, 8.-26.12.1992, 1♂, s.l., 26.12.1992-14.1.1993, G. Williams (GT); 1♂, 1♀, same data as holotype (ANIC, GT).

**Distribution:** New South Wales (NEN, SEN).

**N a m e :** From Minnamurra Falls, in south-eastern New South Wales; to be treated as a noun in apposition.

***Dolichopeza (Dolichopeza) yourula* group (Figs 15, 82-84)**

**D e f i n i t i o n :** Male hypopygium (Fig. 15): tergite 9 (t9) with pair of pointed processes separated by wide U-shaped median notch; sternite 9 (s9) not produced into distinct pair of lobes; outer gonostylus (og) sausage-shaped, with mesal denticle at about 2/3 length, at least 50% longer than inner gonostylus (ig) which is rather flat and constricted at about 3/4 length; distal portion (including apex) of aedeagus (ae) strongly expanded; adminiculum (ad) well developed.

**D i s t r i b u t i o n i n A u s t r a l i a :** North-eastern.

Only one Australian species:

*D. (D.) yourula* n. sp.

***Dolichopeza (Dolichopeza) yourula* n. sp. (Figs 15, 82-84)**

**D e s c r i p t i o n (♂):** Head largely yellowish- to greyish brown; rostrum, basal and apical segment of palpus, vertex, scape and pedicel pale yellow; remainder of palpus pale yellow or pale greyish brown; flagellum dark greyish brown. Thoracic terga greyish brown, pleura yellowish white to dull yellow. Coxae and trochanters pale to dull yellow, trochanters with dark distal mark; pro- and metafemur greyish yellow to greyish brown; protibia dark greyish brown; metatibia dark greyish brown with distal ca. 1/5 yellowish white; basal ca. 1/3 of protarsus brownish grey, distal ca. 2/3 yellowish white; metatarsus yellowish white; other leg segments missing. Wing venation blackish brown; membrane hyaline, pterostigma dark greyish brown; M1 slightly longer than M1+2; anal angle very slightly projecting. Halter with greyish brown stem and greyish yellow to greyish brown knob. Abdomen largely dull yellow; tergites 1 and 7-9 and base and distal end of tergites 2-6 dark greyish brown.

**D i m e n s i o n s :** Wing length 5,9-6,2 mm.

**G e n i t a l i a :** Hypopygium, Figs 15, 82-84.

Female unknown.

**Remarks:** Not similar to any other described species. Diagnostic characters: tergite 9 of male drawn out posteriorly into two horn-like processes; outer gonostylus with denticle at about 2/3 length; apex of aedeagus expanded and rather elaborate.

**Material examined:** Holotype ♂: Queensland, The Boulders, Babinda, 10.5.1967, D.H. Colless (ANIC). Paratype: 1♂, Queensland, 17°17'S/145°34'E, Curtain Fig, Mar. 1988, D.F.C. Rentz (ANIC).

**Distribution:** Queensland (NEQ).

**Name:** Yourula (= Australian Aboriginal word for "horn") refers to the horn-like processes on tergite 9 of the male; to be treated as a noun in apposition.

### ***Dolichopeza (Dolichopeza) cinerea* group (Figs 12, 85-96)**

**Definition:** Male hypopygium (Fig. 12): tergite 9 (t9) without distinct narrow posterior lobes or processes; sternite 9 (s9) produced into distinct pair of more or less hairy but otherwise unarmed lobes; outer gonostylus (og) sausage-shaped, without any denticles, at least twice the length of inner gonostylus (ig) which is rather flat and constricted at about 3/4 length; apex of aedeagus (ae) slender, not expanded; adminiculum (ad) well developed.

**Distribution in Australia:** South-eastern (including Tasmania). Australian species:

*D. (D.) cinerea* (MACQ.)

*D. (D.) longifurca* SKUSE

*D. (D.) tyilye* n. sp.

*D. (D.) victoriae* ALEX.

### ***Dolichopeza (Dolichopeza) cinerea* (MACQUART) (Figs 85-87)**

*Apeilesis cinerea* MACQUART, Mem. Soc. Sci. Agric. Lille (2): 8 (1846).

*Dolichopeza longidigitalis* ALEXANDER, Ann. Mag. nat. Hist. (9) 13: 182 (1924).

*Dolichopeza (Dolichopeza) cinerea* (MACQUART); DOBROWORSKY, Aust. J. Zool., Suppl. Ser. 32: 7 (1974).

**Primary types:** Syntypes (♂, ♀) of *A. cinerea* MACQUART: Tasmania (supposedly in MNP); not seen. Holotype ♂ of *D. longidigitalis* ALEXANDER: New South Wales, Blue Mountains, 25.2.1922, E.W. Ferguson (AM); seen.

**Published records:** New South Wales: no further data (SKUSE 1890: 64); Barrington Tops (ALEXANDER 1928a: 51); Blue Mts (ALEXANDER 1924: 183). Victoria: Eltham; Harcourt; Lal Lal; Maroondah; Sherbrooke; Walhalla; Woodend (all DOBROWORSKY 1974: 8). Tasmania: no further data (SKUSE 1890: 64); Berridale; Blackmans Bay; Ferntree Gully; Hobart (all DOBROWORSKY 1974: 8).

**Previous illustrations:** DOBROWORSKY 1974: Fig. 6 (gonostyli), Fig. 34 (wing).

**Genitalia:** Male hypopygium, Figs 85-87.

**Remarks:** Most similar to *D. tylye* n. sp. Diagnostic characters: segment 9 of male somewhat flattened; posterior lobes of sternite 9 not very hairy; aedeagus not strongly curved and with apex moderately slender.

**New records:** New South Wales: Black Mtn (ANIC); Blue Mts (ANIC); Calga, N of Sydney (GT); Jameson Valley, Katoomba (ANIC); Mt Hyland N.P. (GT); Mt Kosciusko, 1300 m (GT); New England N.P. (ANIC); Styx R. S.F. (GT); Wentworth Falls (AM). Victoria: Barringo Camp, Mt Macedon area (MV); Macedon (MV); Maroondah (ANIC); Mt Baw Baw, 3100 ft (ANIC); Mt Baw Baw, Echo Flat (ANIC); Mt Erica (GT); Lal Lal (ANIC); Sherbrooke (ANIC); Woodend (ANIC). Tasmania: Berridale (ANIC); Blackwood Ck (ANIC); Hobart (ANIC); Hobart, Tarroona (ANIC); Mt Wellington (ANIC).

**Distribution:** New South Wales (NEN, SEN), Victoria, Tasmania.

### ***Dolichozeza (Dolichozeza) tylye* n. sp. (Figs 12, 88-90)**

**Description:** Head largely brownish- to blackish grey, including rostrum, palpus and flagellum; scapus and pedicel brownish- to greyish yellow. Thorax dark greyish brown, terga darker than pleura. Coxae and trochanters pale greyish brown, trochanters with dark distal mark; femora pale to dark greyish brown; tibiae greyish brown, dull yellow at extreme base; tarsi greyish brown. Wing venation greyish brown; membrane pale greyish hyaline, pterostigma dark greyish brown; M1 more than twice to three ti-

mes as long as M1+2; anal angle rather well developed, widely rounded. Halter with dull greyish yellow stem and greyish brown knob. Abdomen pale to dark greyish brown.

**Dimensions:** Wing length, male 9,0-10,0 mm, female 8,9-11,0 mm.

**Genitalia:** Male hypopygium, Figs 12, 88-90.

**Remarks:** Most similar to *D. cinerea* (MACQ.). Diagnostic characters: segment 9 of male somewhat compressed; posterior lobes of sternite 9 densely covered with fine hairs; aedeagus strongly curved and with apex extremely slender.

**Material examined.** Holotype ♂: New South Wales, vicinity of Barrington Tops, Jan. 1943, A. Musgrave (ANIC). Paratypes: New South Wales: 4♂♂, 2♀♀, same data as holotype (ANIC); 3♂♂, 2♀♀, Boonoo Boonoo State Forest, Nov. 1990, G. Theischinger (GT); 1♂, Watagan Forest, 18.-19.2.1980, G. Theischinger and L. Müller (GT).

**Distribution:** New South Wales (NEN, SEN).

**Name:** Tyilye (= Australian Aboriginal word for "worm") refers to the extremely slender and curved aedeagus; to be treated as a noun in apposition.

### ***Dolichopeza (Dolichopeza) longifurca* SKUSE (Figs 91-93)**

*Dolichopeza longifurca* SKUSE, Proc. Linn. Soc. N.S.W. (2) 5: 65 (1890).

*Dolichopeza (Dolichopeza) longifurca* SKUSE; DOBROWORSKY, Aust. J. Zool., Suppl. Ser. 32: 15 (1974).

**Primary type:** Lectotype ♀, by present designation: New South Wales, Sydney, F.A.A. Skuse (ANIC); seen; additionally labelled "Lectotype ♀ *Dolichopeza longifurca* SKUSE, designated by G. Theischinger 1993".

**Published records:** New South Wales: Sydney (SKUSE 1890: 66).

**Previous illustrations:** SKUSE 1890: Pl. IV, fig. 1 (wing); DOBROWORSKY 1974: Fig. 25 (wing).

Previously known only from female.

**Description of male:** Colouration and wing venation much as in female (SKUSE 1890).

**Dimensions:** Wing length 9,8-10,5 mm.

**Genitalia:** Hypopygium, Figs 91-93.

**Remarks:** Very similar to *D. victoriae* ALEX. Diagnostic characters: tergite 9 of male slightly trilobed; inner gonostylus moderately constricted at about 3/4 length.

**New records:** New South Wales: Ebor-Dorrigo (GT); Engadine (GT); Galston Gorge (GT); Lucas Heights (GT).

**Distribution:** New South Wales (NEN, SEN).

***Dolichopeza (Dolichopeza) victoriae* ALEXANDER (Figs 94-96)**

*Dolichopeza victoriae* ALEXANDER, Ann. Mag. nat. Hist. (10) 2: 340 (1928).

*Dolichopeza (Dolichopeza) victoriae* ALEXANDER; DOBROTWSKY, Aust. J. Zool., Suppl. Ser. 32: 25 (1974).

**Primary type:** Holotype ♂: Victoria, Tyers, J. Galbraith (MV); seen.

**Published records:** Victoria: Eltham; Tyers (both ALEXANDER 1928b: 341); Femtree Gully (DOBROTWSKY 1974: 26).

**Previous illustrations:** DOBROTWSKY 1974: Fig. 21 (gonostyli), Fig. 35 (wing).

**Genitalia:** Male hypopygium, Figs 94-96.

**Remarks:** Very similar to *D. longifurca* SKUSE. Diagnostic characters: tergite 9 of male postero-medially distinctly excised; inner gonostylus strongly constricted at about 3/4 length.

**New records:** Victoria: Eltham (ANIC); Macedon (MV). South Australia: Aldgate Valley (MV).

**Distribution:** Victoria, South Australia (SES).

***Dolichopeza (Dolichopeza) danbulla* group (Figs 13, 97-99)**

**Definition:** Male hypopygium (Fig. 13): tergite 9 (t9) posteriorly with pair of subtriangular lobes or denticles; sternite 9 (s9) produced into distinct pair of lobes bearing apically one or several spines or bristles; outer gonostylus (og) without or with mesal denticle (at about 2/3 length) and at least 50% longer than inner gonostylus (ig) which is rather flat and constricted at

about 2/3 length; apex of aedeagus (ae) slender, not expanded; adminiculum (ad) well developed.

**Distribution in Australia:** Eastern (excluding Tasmania).

**Australian species:**

*D. (D.) danbulla* n. sp.

*D. (D.) kongoola* n. sp.

*D. (D.) zenta* n. sp.

***Dolichopeza (Dolichopeza) danbulla* n. sp. (Figs 13, 97-99)**

**Description (♂):** Head largely greyish brown, including rostrum, scape and pedicel; palpus and flagellum blackish brown to black. Thoracic terga greyish brown, pleura pale yellowish brown. Coxae and trochanters brownish yellow, trochanters with dark distal mark; other leg segments missing. Wing venation greyish- to blackish brown; membrane hyaline, pterostigma greyish brown. Halter with yellowish grey stem and greyish brown knob. Abdomen yellowish- to greyish brown without distinct pattern.

**Dimensions:** Wing length at least 6,5 mm (broken).

**Genitalia:** Hypopygium, Figs 13, 97-99.

Female unknown.

**Remarks:** Very similar to *D. zenta* n. sp., similar to *D. kongoola* n. sp. Diagnostic characters: tergite 9 of male with semicircular excision between two moderately distant, substantial subtriangular denticles; sternite 9 of male drawn out into two talon-like processes; outer gonostylus with denticle at about 2/3 length.

**Material examined:** Holotype ♂: Queensland, Mount Edith Forest Road, 1 1/2 km off Danbulla Road, 6.5.1967, D.H. Colless (ANIC).

**Distribution:** Queensland (NEQ).

**Name:** From Danbulla, near the type locality; to be treated as a noun in apposition.

***Dolichozepe (Dolichozepe) zenta* n. sp. (Figs 100-102)**

**Description** (♂): Head brownish grey; rostrum, palpus, scape and pedicel somewhat paler, flagellum somewhat darker than the rest. Thoracic terga greyish brown, pleura pale greyish yellow. Coxae and trochanters pale brownish yellow, trochanters with dark distal mark; femora pale greyish yellow at base, otherwise greyish- to blackish brown; tibiae greyish- to blackish brown, only extreme base dull greyish yellow; tarsi greyish- to blackish brown, only terminal segments of metatarsus dark to pale greyish yellow. Wing venation blackish brown; membrane hyaline, slightly suffused with grey; pterostigma greyish brown, a spot adjacent to its distal side whitish hyaline; M1 about twice the length of M1+2; anal angle widely rounded. Halter with greyish yellow to greyish brown stem and dark greyish brown knob. Abdomen pale to dark greyish brown.

**Dimensions**: Wing length 6,5-7,6 mm.

**Genitalia**: Hypopygium, Figs 100-102.

Female unknown.

**Remarks**: Very similar to *D. danbulla* n. sp., similar to *D. kongoola* n. sp. Diagnostic characters: tergite 9 of male with apical margin almost straight between two widely distant, very small subtriangular denticles; sternite 9 of male drawn out into two talon-like processes; outer gonostylus with large tooth at about 2/3 length.

**Material examined**: Holotype ♂, Queensland, Binna Burra 9.12. 1966, N. Dobrotworsky (ANIC). Paratypes: Queensland: 1♂, Binna Burra, 2700 ft, 11.12.1966, N. Dobrotworsky (GT). New South Wales: 1♂, Lorien Ref., 3 km N Lansdowne, near Taree, rainforest margin, malaise trap, 19-25.10.1987, 1♂, s.l., 6-7.2.1988, G. Williams (GT); 1♂, Minnamurra Falls, 29.1.1968, Z. Liepa (ANIC); 1♂, Mount Royal, Barrington Tops, 16.11.1985, D. Bickel (GT); 1♂, Mount Wilson, 12.2.1988, G. Theischinger (GT).

**Distribution**: Queensland (SEQ), New South Wales (SEN).

**Name**: After the late Ms Zenta Liepa who collected this species at Minnamurra Falls; to be treated as a noun in apposition.

***Dolichozepe (Dolichozepe) kongoola* n. sp. (Figs 103-105)**

**Description** (♂): Head largely dark greyish brown and brownish

grey, including rostrum, scape, pedicel and most of palpus; second palpal segment greyish yellow; flagellum brownish black. Thoracic terga pale greyish brown to blackish brown, pleura whitish- to yellowish grey. Coxae pale grey; trochanters greyish yellow with dark distal mark; femora yellowish- to greyish brown; tibiae greyish brown; basal segment of tarsi greyish brown, only apex of metatarsus pale greyish yellow, second and third tarsal segments greyish- to whitish yellow, distal tarsal segments yellowish- to greyish brown. Wing venation dark yellowish- to dark greyish brown; membrane hyaline, slightly suffused with greyish yellow; pterostigma greyish brown, a distinct whitish hyaline spot adjacent to its proximal and to its distal side; M1 slightly to markedly longer than M1+2; anal angle widely and evenly rounded. Halter with pale yellow stem and dark greyish brown knob. Abdomen yellowish- to brownish grey without distinct pattern.

**Dimensions:** Wing length 8,1-8,5 mm.

**Genitalia:** Hypopygium, Figs 103-105.

**Female unknown.**

**Remarks:** Similar to both *D. danbulla* n. sp. and *D. zenta* n. sp. Diagnostic characters: tergite 9 of male posteriorly concave and with two small but distinct denticles; sternite 9 of male drawn out into two subtriangular lobes with terminal bristle; outer gonostylus unarmed; aedeagus very slender, with apex evenly tapered.

**Material examined:** Holotype ♂: New South Wales, Point Lookout, 6.2.1988, G. Theischinger (AM). Paratype: 1♂, New South Wales, Tidbinbilla, A.C.T., malaise trap, 29.11.-2.12.1965, D. Havenstein (ANIC).

**Distribution:** New South Wales (NEN, SEN).

**Name:** Kongoola (= Australian Aboriginal word for "freshwater-fish") is to be treated as a noun in apposition.

### ***Dolichozepe (Dolichozepe) davidsoni* group (Figs 11, 106-108)**

**Definition:** Male hypopygium (Fig. 11): tergite 9 (t9) posteriorly with narrow U-shaped to semicircular median notch; sternite 9 (s9) rather short and not produced into pair of lobes; outer gonostylus (og) straight with distal portion markedly thinner than basal portion; aedeagus (ae) very stout

and with apex distinctly bilobed; adminiculum (ad) vestigial.

**Distribution in Australia:** South-eastern (excluding Tasmania).

Only one Australian species:

*D. (D.) davidsoni* ALEX.

***Dolichocheza (Dolichocheza) davidsoni* ALEXANDER (Figs 11, 106-108)**

*Dolichocheza (Dolichocheza) davidsoni* ALEXANDER, Ann. Mag. nat. Hist. (10) 5: 137 (1930).

**Primary type:** Holotype ♂: Queensland, Mt Tamborine, 2000 ft, Nov. 1928, W.H. Davidson (NMNH); seen.

**Published records:** Queensland: Mt Tamborine, 2000 ft (ALEXANDER 1930: 138). New South Wales: Dorrigo (ALEXANDER 1944: 5); Eastern Dorrigo, 2000-3000 ft (ALEXANDER 1930: 138). Victoria: Cabbage Tree Ck; Cann R. (both DOBROWORSKY 1974: 10).

**Previous illustrations:** DOBROWORSKY 1974: Fig. 7 (gonostyli), Fig. 28 (wing).

**Genitalia:** Male hypopygium, Figs 11, 106-108.

**Remarks:** Not very similar to any other described species. Diagnostic characters: aedeagus stout, strongly curved, with apex distinctly bilobed; adminiculum vestigial.

**New records:** New South Wales: Barrington House (ANIC); 10 mi. N of Batemans Bay (ANIC); Brown Mtn, nr Nimmitabel, 1200 m (GT); Clyde Mtn (ANIC); 33 mi. Dorrigo-Coramba Rd (ANIC); Lorient Ref., 3 km N Lansdowne nr Taree (GT); Mt Barrington, 1100 ft (ANIC); Royal N.P., Port Hacking (ANIC); Rocky Crossing, Williams R. (GT); Upper Allyn (ANIC); Wallaroo S.F. (ANIC); Weismantels (ANIC). Victoria: Cabbage Tree Ck (ANIC); Young's Ck, 12 km N of Orbost, Bonang Hwy (ANIC).

**Distribution:** Queensland (SEQ), New South Wales (NEN, SEN), Victoria.

***Dolichopeza (Dolichopeza) niveitarsis* group (Figs 16, 109-140)**

**Definition:** Male hypopygium (Fig. 16): tergite 9 (t9) with two more or less developed rounded posterior lobes; sternite 9 (s9) not produced into distinct pair of lobes; outer gonostylus (og) sausage-shaped, without any denticles; inner gonostylus (ig) not flat or distinctly constricted; apex of aedeagus (ae) varying from very slender to moderately expanded; adminiculum (ad) well developed.

**Distribution in Australia:** Eastern (including Tasmania).

**Australian species:**

*D. (D.) aequalis* n. sp.

*D. (D.) asymmetrica* n. sp.

*D. (D.) ballaratiensis* DOBR.

*D. (D.) corinnaiensis* DOBR.

*D. (D.) cyatheti* ALEX.

*D. (D.) directa* n. sp.

*D. (D.) nigrina* DOBR.

*D. (D.) niveitarsis* SKUSE

*D. (D.) palliditarsis* ALEX.

*D. (D.) pygmaea* ALEX.

*D. (D.) subposticata* ALEX.

*D. (D.) thowla* n. sp.

***Dolichopeza (Dolichopeza) niveitarsis* SKUSE (Figs 109-111)**

*Dolichopeza niveitarsis* SKUSE, Proc. Linn. Soc. N.S.W. (2) 5: 62 (1890).

*Dolichopeza (Dolichopeza) niveitarsis* SKUSE; DOBROTORSKY, Aust. J. Zool., Suppl. Ser. 32: 17 (1974).

**Primary type:** Lectotype ♂, by present designation: New South Wales, Mossman's Bay, near Sydney, F.A.A. Skuse (ANIC); seen; additionally labelled "Lectotype ♂ *Dolichopeza niveitarsis* SKUSE, designated by G. Theischinger 1993".

**Published records:** New South Wales: Lawson, Blue Mts; North Shore and Mossman's Bay, nr Sydney (both SKUSE 1890: 62). Victoria: Toorloo Arm, Gippsland (DOBROTORSKY 1974: 18).

**Previous illustrations:** DOBROTORSKY 1974: Fig. 12 (gonostyli), Fig. 32 (wing).

**Genitalia:** Male hypopygium, Figs 109-111.

**Remarks:** Most similar to *D. palliditarsis* ALEX. Diagnostic characters: posterior lobes of tergite 9 of male subtrapezoid; outer and inner gonostylus subequal in length; apex of aedeagus markedly asymmetrical.

**New records:** New South Wales: Canoe Ck, Colo R. Gorge (GT); Kanangra Walls (GT); nr Macquarie Rivulet (GT); Mt Keira (GT); Watagan Forest (GT).

**Distribution:** New South Wales (SEN). The identity of the specimen from Victoria (see above) is doubtful.

***Dolichopeza (Dolichopeza) palliditarsis* ALEXANDER (Fig. 112)**

*Dolichopeza palliditarsis* ALEXANDER, Ann. Mag. nat. Hist. (10) 2: 341 (1928).

*Dolichopeza (Dolichopeza) palliditarsis* ALEXANDER; DOBROWORSKY, Aust. J. Zool., Suppl. Ser. 32: 19 (1974).

**Primary type:** Holotype ♂: Tasmania, Fern Tree, Mount Wellington, 11.11.1922, A. Tonnoir (ANIC); seen.

**Published records.** Tasmania: Cradle Valley; Fern Tree, Mt Wellington; Zeehan (all ALEXANDER 1928b: 342); National Park (DOBROWORSKY 1974: 19).

**Genitalia:** Male hypopygium (from holotype slide), Fig. 112. Description (according to ALEXANDER 1928): Male hypopygium having tergite 9 with a broad obtuse lobe on either side of a deep U-shaped median notch, the lobes much wider than the notch, pale in colour. Outer gonostylus cylindrical, unarmed, of moderate size only, much shorter than in *D. longidigitalis* ALEX. (= *D. cinerea* (MACQ.)) and its allies, the base narrow, the remainder of the style cylindrical. Inner gonostylus about 1/2 length of the outer, broadest at base, thence narrowed to the obtuse paler apex, the style with the outer margin darkened, setiferous, with subapical black spine; mesal face near base of style with low setiferous tubercle.

**Remarks:** Most similar to *D. niveitarsis* SKUSE. Diagnostic characters: posterior lobes of tergite 9 of male subtrapezoid; outer gonostylus much longer than inner gonostylus; apex of aedeagus apparently not markedly asymmetrical.

**New records:** None.

**Distribution:** Tasmania.

***Dolichozepe (Dolichozepe) asymmetrica* n. sp. (Figs 113-115)**

**Description:** Head largely greyish brown, including palpus and flagellum; rostrum, vertex, scape and pedicel greyish- to pale brownish yellow. Thoracic terga greyish brown; pleura largely greyish yellow with anepisternum and katepisternum darker than the rest. Coxae dark greyish yellow; trochanters greyish yellow with dark distal mark; femora pale to dark brownish grey; tibiae brownish grey; basal segment of tarsi brownish grey, only apex of metabasitarsus greyish white; all other tarsal segments white. Wing venation greyish- to blackish brown; membrane hyaline, slightly suffused with grey; pterostigma brownish grey, a spot adjacent to its distal side whitish hyaline; M1 1 1/2 to more than 2 times the length of M1+2; anal angle widely rounded. Halter brownish grey except for paler base. Abdomen greyish yellow and greyish brown; tergites largely greyish brown, 2-7 in male, 2-9 in female with dull greyish yellow patch each side.

**Dimensions:** Wing length, male 6,9-7,7 mm, female 7,8-9,0 mm.

**Genitalia:** Male hypopygium, Figs 113-115.

**Remarks:** Most similar to *D. howla* n. sp. Diagnostic characters: posterior lobes of tergite 9 of male subtrapezoid; inner gonostylus without distinct basal spine; distal portion of aedeagus in natural position not parallel to body axis; adminiculum truncate.

**Material examined:** Holotype ♂: New South Wales, Dorrigo National Park, 2400ft, 11.11.1967, N. Dobrotworsky (ANIC). Paratypes: Queensland: 11 ♀♀, Binna Burra, 2700 ft, 11.12.1966, N. Dobrotworsky (ANIC); 1 ♂, 2 ♀♀, Cunningham Gap, 2500 ft, 5.4.1967, N. Dobrotworsky (ANIC); 1 ♂, Lamington National Park, Green Mtn, Earthwatch Australia (ANIC); 2 ♂♂, Lamington National Park, (Canungra, Morans, Tooloona), 8.-11.11.1982, G. Theischinger (GT). New South Wales: 2 ♂♂, same data as holotype (ANIC); 1 ♂, 2 ♀♀, Dorrigo National Park, Nov. 1990, L. Müller and G. Theischinger (GT); 2 ♂♂, 2 ♀♀, Mt Dromedary, 9.-10.11.1985, G. Theischinger (GT); 1 ♂, 1 ♀, Mt Keira, 3.12.1979, G. Theischinger (GT); 4 ♂♂, 3 ♀♀, Watagan Forest, 18.-19.2.1980, C., D. and G. Theischinger (GT).

**Distribution:** Queensland (SEQ), New South Wales (NEN, SEN).

**Name:** *Asymmetricus* 3 (= Latinized for "asymmetrical") refers to the aedeagus.

***Dolichozepe (Dolichozepe) thowla* n. sp. (Figs 16, 116-118)**

**Description** (♂): Head largely greyish brown, including palpus and flagellum; rostrum, vertex, scape and pedicel greyish- to brownish yellow. Thoracic terga greyish brown; pleura largely greyish yellow, anepisternum somewhat darker than the rest. Coxae pale greyish yellow; trochanters greyish yellow with dark distal mark; femora greyish brown; tibiae greyish brown, extreme base dull yellow; basal segment of tarsi greyish brown, slightly paler distally; other tarsal segments dull greyish yellow. Wing venation greyish brown; membrane hyaline, slightly suffused with greyish brown; pterostigma greyish brown; M1 not quite twice the length of M1+2; anal angle widely and evenly rounded. Halter with greyish yellow stem and greyish yellow and greyish brown knob. Abdomen greyish brown and greyish- to brownish yellow; tergites mainly greyish brown, at least 2-6 with paler patch each side.

**Dimensions**: Wing length 7,2 mm.

**Genitalia**: Hypopygium, Figs 16, 116-118.

Female unknown.

**Remarks**: Most similar to *D. asymmetrica* n. sp. Diagnostic characters: posterior lobes of tergite 9 of male rather long and narrow; inner gonostylus with distinct basal spine; distal portion of aedeagus in natural position parallel to body axis; adminiculum spoon-shaped.

**Material examined**. Holotype ♂: New South Wales, Lorient Ref., 3 km N Lansdowne near Taree, rainforest margin, malaise trap, 14.-27.9.1987, G. Williams (AM).

**Distribution**: New South Wales (NEN); known only from type locality.

**Name**: Thowla (= Australian Aboriginal word for "spoonbill duck") refers to the shape of the adminiculum; to be treated as a noun in apposition to the generic name.

***Dolichopeza (Dolichopeza) ballaratiensis* DOBROTORSKY (Figs 119-121)**

*Dolichopeza (Dolichopeza) ballaratiensis* DOBROTORSKY, Aust. J. Zool., Suppl. Ser. 32: 4 (1974).

Primary type: Holotype ♂: Victoria, Ballarat, 28.5.1964, N. Dobrotorsky (ANIC); seen.

Published records: Victoria: Ballarat (DOBROTORSKY 1974: 4). Tasmania: Heller Gorge (= probably Helyer Gorge) (DOBROTORSKY 1974: 4).

Previous illustrations: DOBROTORSKY 1974: Fig. 3 (gonostyli), Fig. 43 (wing).

Genitalia: Male hypopygium, Figs 119-121.

Remarks: Very similar to *D. corinnaiensis* DOBR. and, apparently, to *D. nigrina* DOBR. Diagnostic characters: notch between subtriangular posterior lobes of tergite 9 of male rather wide; inner gonostylus with apical beak long; distal portion of adminiculum not expanded.

New records: None.

Distribution: Victoria, Tasmania.

***Dolichopeza (Dolichopeza) corinnaiensis* DOBROTORSKY (Figs 122-124)**

*Dolichopeza (Dolichopeza) corinnaiensis* DOBROTORSKY, Aust. J. Zool., Suppl. Ser. 32: 8 (1974).

Primary type: Holotype ♂: Tasmania: Corinna, 5.11.1972, A. Neboiss (MV); seen.

Published records: Tasmania: Corinna (DOBROTORSKY 1974: 8, 9).

Previous illustrations: DOBROTORSKY 1974: Fig. 42 (wing).

Genitalia: Male hypopygium, Figs 122-124.

Remarks: Very similar to *D. ballaratiensis* DOBR. and, apparently, to *D. nigrina* DOBR. Diagnostic characters: notch between rounded posterior lobes of tergite 9 of male rather narrow; apical beak of inner gonostylus

short; distal portion of adminiculum not expanded.

New records: Tasmania: Corinna (MV).

Distribution: Tasmania; known only from Corinna.

***Dolichopeza (Dolichopeza) nigrina* DOBROWORSKY (Figs 125, 126)**

*Dolichopeza (Dolichopeza) nigrina* DOBROWORSKY, Aust. J. Zool., Suppl. Ser. 32: 17 (1974).

Primary type: Holotype ♂: Tasmania, Brickmakers Bay, 17.2.1965, F. Martin (ANIC); seen.

Published records: Tasmania: Brickmakers Bay (DOBROWORSKY 1974: 17).

Previous illustrations: DOBROWORSKY 1974: Fig. 13 (gonostyli), Fig. 41 (wing).

Genitalia: Male hypopygium (partly from holotype slide), Figs 125, 126.

Description (according to DOBROWORSKY 1974): apical border of tergite 9 with shallow emargination; lateral lobes low, blunt; inner gonostylus strong, dorsal edge with strong teeth, beak short, straight with blunt apex; outer gonostylus straight, relatively short, uniformly setose.

Remarks: Apparently very similar to *D. ballaratiensis* DOBR. and *D. corinnaiensis* DOBR. Diagnostic characters: notch between posterior lobes of tergite 9 of male rather wide; distal portion of adminiculum expanded.

New records: None.

Distribution: Tasmania; known only from Brickmakers Bay.

***Dolichopeza (Dolichopeza) directa* n. sp. (Figs 127-130)**

Description (♂): Head largely dark greyish brown; rostrum, vertex, scape and pedicel pale brownish- to greyish yellow; palpus pale greyish brown; flagellum blackish brown. Thoracic terga greyish brown; pleura largely greyish yellow, anepisternum greyish brown. Coxae greyish yellow, mesocoxa somewhat darker anteriorly; trochanters greyish- to dark

brownish yellow with dark distal mark; other leg segments missing. Wing venation greyish brown; membrane hyaline, slightly suffused with brown; pterostigma greyish brown; M1 at least twice the length of M1+2; anal angle widely and evenly rounded. Halter greyish- to brownish yellow. Abdomen greyish brown and greyish yellow; tergites largely greyish brown, 2-6 with paler patch each side.

**D i m e n s i o n s :** Wing length 7,4 mm.

**G e n i t a l i a :** Hypopygium, Figs 127-130.

Female unknown.

**R e m a r k s :** Very similar to *D. pygmaea* ALEX. and *D. subposticata* ALEX. Diagnostic characters: posterior margin of tergite 9 of male strongly undulate; aedeagus almost straight (as seen from lateral aspect), with apex not expanded.

**M a t e r i a l e x a m i n e d :** Holotype ♂: Queensland, Lamington National Park, Green Mountain, Earthwatch Australia (ANIC).

**D i s t r i b u t i o n :** Queensland (SEQ); known only from Green Mountain.

**N a m e :** Directus 3 (= Latin for "straight") refers to the almost straight aedeagus.

### ***Dolichopeza (Dolichopeza) pygmaea* ALEXANDER (Fig. 131)**

*Dolichopeza niveitarsis* SKUSE; RIEDEL, Ark. Zool. 13 (14): 6 (1920).

*Dolichopeza pygmaea* ALEXANDER, Ann. Mag. nat. Hist. (10) 2: 344 (1928).

*Dolichopeza (Dolichopeza) pygmaea* ALEXANDER; DOBROTWORSKY, Aust. J. Zool., Suppl. Ser. 32: 20 (1974).

**P r i m a r y t y p e :** Holotype ♂: Queensland, Malanda, E. Mjöberg (NMNH); seen.

**P u b l i s h e d r e c o r d s :** Queensland: Atherton; Malanda (both ALEXANDER 1928b: 345).

**P r e v i o u s i l l u s t r a t i o n s :** DOBROTWORSKY 1974: Fig. 15 (gonostyli), Fig. 33 (wing).

Known only from male.

**G e n i t a l i a :** Hypopygium (from holotype slide), Fig. 131.

Description (according to ALEXANDER 1920): Male hypopygium small, tergite 9 with two low submedian lobes which are obtusely rounded, the notch in between broadly U-shaped; lateral angles of tergite 9 conspicuous, projecting caudad beyond the level of the median lobe. Outer gonostylus simple, cylindrical, with long coarse setae. Inner gonostylus gently curved into a boomerang-shaped structure, the outer margin narrowly blackened and microscopically denticulate, the outermost tooth larger; a small obtuse blackened tooth shortly before the obtuse apex.

Remarks: Very similar to *D. directa* n. sp. and *D. subposticata* ALEX. Diagnostic characters: posterior margin of tergite 9 of male undulate; aedeagus strongly S-curved (as seen from lateral aspect), with apex not expanded.

New records: None.

Distribution: Queensland (NEQ).

### ***Dolichopeza (Dolichopeza) subposticata* ALEXANDER (Figs 132-134)**

*Dolichopeza subposticata* ALEXANDER, Ann. Mag. nat. Hist. (10) 2: 342 (1928).

*Dolichopeza (Dolichopeza) subposticata* ALEXANDER; ALEXANDER, Proc. Linn. Soc. N.S.W. 69: 5 (1944).

Primary type: Holotype ♂: Tasmania, Burnie, 26.10.1922, A. Tonnoir (ANIC); seen.

Published records: Victoria: Sassafras, Dandenong Ra. (ALEXANDER 1928b: 343); mts above Warburton, 3000-4000 ft (ALEXANDER 1944: 5); Belgrave; Mt Macedon; Walhalla (all DOBROWORSKY 1974: 24). Tasmania: Burnie; Mt Field; Mt Wellington (all ALEXANDER 1928b: 343,344).

Previous illustrations: DOBROWORSKY 1974: Fig. 19 (gonostyli), Fig. 40 (wing).

Genitalia: Male hypopygium, Figs 132-134.

Remarks: Very similar to *D. directa* n. sp. and *D. pygmaea* ALEX. Diagnostic characters: posterior margin of tergite 9 of male feebly undulate; apex of aedeagus markedly expanded.

New records: Victoria: 6 km NE of Erica (ANIC); Grampians

(ANIC); 5 N Grampians (ANIC); Macedon (MV); Sherbrooke (ANIC).

**Distribution:** Victoria, Tasmania.

***Dolichocheza (Dolichocheza) cyatheti* ALEXANDER (Figs 135-137)**

*Dolichocheza (Dolichocheza) cyatheti* ALEXANDER, Ann. Mag. nat. Hist. (10) 13: 244 (1934).

**Primary type:** Holotype ♂: Victoria, Belgrave, 31.3.1929, F.E. Wilson (MV); seen.

**Published records:** Victoria: Belgrave; Macedon; Walhalla (all ALEXANDER 1934: 245); Sherbrooke (DOBROWORSKY 1974: 9).

**Previous illustrations:** DOBROWORSKY 1974: Fig. 8 (gonostyli), Fig. 26 (wing).

**Genitalia:** Male hypopygium, Figs 135-137.

**Remarks:** Not very similar to any other described species but definitely a member of the group. Diagnostic characters: posterior margin of tergite 9 of male undulate; aedeagus extremely slender, with apex not expanded; adminiculum distinctly bilobed.

**New records:** Victoria: Sherbrooke (ANIC). Tasmania: Strahan (BPBM).

**Distribution:** Victoria, Tasmania.

***Dolichocheza (Dolichocheza) aequalis* n. sp. (Figs 138-140)**

**Description (♂):** Head largely grey; rostrum, palpus, scape and pedicel pale yellowish- to greyish brown; flagellum dark greyish brown. Thoracic terga largely dark greyish brown, scutellum and particularly mediotergite somewhat paler; pleura mainly pale yellowish grey, anepisternum dark greyish brown. Coxae and trochanters greyish yellow, trochanters with dark distal mark; femora greyish yellow (at base) to dark greyish brown; tibiae largely greyish- to blackish brown, extreme base yellow, apex dull greyish yellow; basal segment of tarsi greyish brown fading into greyish yellow in distal ca. 1/3, other tarsal segments greyish- to dull whitish yellow. Wing venation greyish- to blackish brown; membrane hyaline, slightly

suffused with brownish grey; pterostigma brownish grey, a spot adjacent to its distal side whitish hyaline; M1 about 3 times the length of M1+2; anal angle widely rounded. Halter dull yellow at base, otherwise greyish brown. Abdomen greyish- and yellowish brown and greyish yellow; tergites largely greyish brown, most with paler patch each side.

**D i m e n s i o n s :** Wing length 8,1-8,3 mm.

**G e n i t a l i a :** Hypopygium, Figs 138-140.

Female unknown.

**R e m a r k s :** Not very similar to any other described species. Not a clear-cut member of the group. Diagnostic characters: tergite 9 of male with wide V-shaped median excision between slightly bilobed posterior lobes; outer gonostylus stout, sausage-shaped, not longer than inner gonostylus.

**M a t e r i a l   e x a m i n e d :** Holotype ♂: Queensland, Binna Burra, 2700 ft, 11.12.1966, N. Dobrotworsky (ANIC). Paratype: 1♂, Queensland, Lamington National Park, Green Mountain, Earthwatch Australia (GT).

**D i s t r i b u t i o n :** Queensland (SEQ).

**N a m e :** *Aequalis*, -e (= Latin for "equal") refers to the "equal" length of outer and inner gonostylus.

### ***Dolichopeza (Dolichopeza) collessi* group (Figs 9, 141-143)**

**D e f i n i t i o n :** Male hypopygium (Fig. 9): tergite 9 (t9) with meso-caudally pointing subtriangular posterior denticles adjacent to postero-lateral angles; sternite 9 (s9) not produced into distinct pair of lobes; outer gonostylus (og) large, sickle-shaped but not pointed; inner gonostylus (ig) foot-shaped, bearing heavily sclerotized ridges; apex of aedeagus (ae) not expanded; adminiculum (ad) well developed.

**D i s t r i b u t i o n   i n   A u s t r a l i a :** North-eastern.

Only one Australian species:

*D. (D.) collessi* n. sp.

### ***Dolichopeza (Dolichopeza) collessi* n. sp. (Figs 9, 141-143)**

**D e s c r i p t i o n (♂):** Head largely yellowish- to greyish brown, including

rostrum, distal segment of palpus, scape and pedicel; flagellum and basal segments of palpus greyish- to blackish brown. Thoracic terga greyish brown, pleura pale greyish yellow. Coxae and trochanters pale greyish yellow, trochanters with dark distal mark; mesofemur yellowish grey (at base) to blackish brown; mesotibia brownish grey; mesotarsus pale brownish grey to yellowish white; other leg segments missing. Wing venation blackish brown; membrane hyaline, pterostigma greyish brown; M1 about twice the length of M1+2; anal angle widely rounded. Halter with dull yellow stem and greyish brown knob. Abdomen greyish brown without distinct pattern.

**Dimensions:** Wing length 7,2 mm.

**Genitalia:** Hypopygium, Figs 9, 141-143.

**Female unknown.**

**Remarks:** Not similar to any other described species. Diagnostic characters: postero-median excision of tergite 9 of male wide; outer gonostylus large and flat, apex rounded; aedeagus slender and tapered.

**Material examined:** Holotype ♂: Queensland, 12°43'S/143°17'E, 9 km ENE of Mount Tozer, 5-10.7.1986, D.H. Colless (ANIC).

**Distribution:** Queensland (CY); known only from Mt Tozer.

**Name:** Dedicated to Dr D.H. Colless, former curator of Diptera in the ANIC.

### ***Dolichopeza (Dolichopeza) ferox* group (Figs 10, 144-146)**

**Definition:** Male hypopygium (Fig. 10): tergite 9 (t9) with posterior lobes prominent and separated by wide U-shaped median excision; outer gonostylus (og) a broad flattened blade that narrows into an acute spine directed mesad.

**Distribution in Australia:** South-eastern (Tasmania only).

Only one Australian species:

*D. (D.) ferox* ALEX.

***Dolichopeza (Dolichopeza) ferox* ALEXANDER (Figs 10, 144-146)**

*Dolichopeza ferox* ALEXANDER, Ann. Mag. nat. Hist. (10) 2: 337 (1928).

*Dolichopeza (Dolichopeza) ferox* ALEXANDER; DOBROTORSKY, Aust. J. Zool., Suppl. Ser. 32: 12 (1974).

Primary type: Holotype ♂: Tasmania, Mt Wellington, 1.12.1922, A. Tonnoir (ANIC); seen; genitalia partly lost.

Published records: Tasmania: Mt Wellington (ALEXANDER 1928b: 338).

Known only from male.

Genitalia: Hypopygium (partly), Figs 10, 144-146.

Description (according to ALEXANDER 1928b): Male hypopygium very different in structure from all other described Australian species. Tergite 9 with the lateral angles produced caudad into conspicuous blackened lobes, the tips of which are obliquely truncated, the broad median area broadly U-shaped, fringed with sparse long setae, the median point with a tiny emargination. Outer gonostylus a broad flattened blade that narrows into an acute black spine directed mesad; surface of the style, but especially the mesal edge, densely fringed with long setae; extreme base of style narrowed into a slender petiole. Inner gonostylus small, blackened, the tip narrowed, the outer margin with short but conspicuous setae.

Remarks: Apparently not similar to any other described species, but assessment of affinities difficult (insufficient material). Diagnostic characters: tergite 9 with wide U-shaped median excision between large lobes; outer gonostylus large and flat, apex pointed.

New records: None.

Distribution: Tasmania; known only from Mt Wellington.

***Dolichopeza (Dolichopeza)* species of uncertain affinities**

*D. (D.) cairnensis* ALEX.

*D. (D.) segnis* ALEX.

***Dolichopeza (Dolichopeza) cairnensis* ALEXANDER (Fig. 147)**

*Dolichopeza (Dolichopeza) cairnensis* ALEXANDER, Ann. Mag. nat. Hist. (10) 13: 242 (1934).

**Primary type:** Holotype ♂: Victoria, Ben Cairn near Millgrove, 2900-3200 ft, 9.2.1929, F.E. Wilson (MV); seen; genitalia missing.

**Published records:** New South Wales: Mt Victoria, Blue Mts (ALEXANDER 1934: 244). Victoria: Ben Cairn nr Millgrove, 2900-3200 ft (ALEXANDER 1934: 244).

**Previous illustrations:** DOBROWORSKY 1974: Fig. 5 (gonostyli).

Known only from male.

**Original Description** (edited): Length about 7,5-8,5 mm; wing 7,5-8,8 mm. Head brown, the anterior vertex paler; frontal prolongation light brown; palpi dark brown; antennae with scape and pedicel brownish ochreous; flagellum passing into black, flagellar segments elongate-cylindrical. Mesonotum light brown, the prescutum with three slightly darker brown stripes that are but little conspicuous against this ground-colour; each scutal lobe variegated with two dark brown areas; pleura and pleurotergite pale testaceous-yellow, the ventral anepisternum a trifle darker. Legs with the coxae and trochanters pale testaceous-yellow; femora brown, passing into black at tips, the bases narrowly paler; tibiae and tarsi black; tips of all tarsi creamy-white, narrowly so on the forelegs, more extensively so on the posterior tarsi where the tips of the basitarsi and succeeding segments are brightened, the outermost segments again darkened. Wing greyish yellow, with a restricted darker pattern; stigma oval, dark brown; relatively broad seams on anterior cord and bscu; outer end of cell Sc2 conspicuously darkened, only the base, beyond the stigma, creamy-yellow, veins of medial field narrowly seamed with brown; cells C and Sc a trifle darker than the ground-colour; pre-stigmal pale area relatively inconspicuous; veins black; macrotrichia of veins relatively long and conspicuous; forks of medial field moderately deep; bscu nearly its own length before fork of M; A2 of moderate length, the cell narrow. Halter elongate, pale, the knob brownish black. Abdominal tergites chiefly brown, only the lateral portions of the intermediate segments with yellow areas; sternites extensively pale yellow, the incisures narrowly darkened; hypopygium chiefly dark.

**Genitalia:** Hypopygium (partly; after DOBROTWORSKY 1974), Fig. 147.

**Description** (according to ALEXANDER 1934, edited): Caudal margin (of tergite 9) having a very shallow median notch, the lateral portions produced into short broad lobes that are shallowly emarginate at tips. Outer gonostylus a cylindrical fleshy lobe that is conspicuously setiferous. Inner gonostylus pale, the apex obliquely truncated; at near midlength the style bears a blackened lateral flange or lobe. A conspicuous pale depressed phallosomic plate, its caudal margin gently concave, each lateral angle with a very long powerful seta. Aedeagus more slender than in *D. subposticata* but still relatively stout, the apex truncated and provided with a subapical ringlike collar.

**Remarks:** The available material is insufficient for assessing similarity or affinities. Fig. 147 is a reproduction of DOBROTWORSKY's (1974) Fig. 5. According to ALEXANDER (1934) closest to *D. subposticata* ALEX. Diagnostic characters: see above.

**New records:** None.

**Distribution:** New South Wales (SEN), Victoria.

### ***Dolichopeza (Dolichopeza) segnis* ALEXANDER**

*Dolichopeza (Dolichopeza) segnis* ALEXANDER, Ann. Mag. nat. Hist. (10) 19: 334 (1937).

**Primary type:** Holotype ♀: New South Wales, Dorrig, 2000 ft, 12.2.1933, W. Heron (NMNH); seen.

**Published records:** New South Wales: Dorrig, 2000 ft (ALEXANDER 1937: 335).

**Previous illustrations:** DOBROTWORSKY 1974: Fig. 39 (wing).

Known only from female.

**Original Description** (edited): Length about 9 mm; wing 7,5 mm. Frontal prolongation of head yellow; palpi dark brown; antennae broken beyond the third segment, dark brown; front and anterior vertex light yellow; remainder of head dark brown. Mesonotum dark brown, the prescutum with four scarcely apparent darker brown stripes; median area of scutum, scutellum and mediotergite slightly more testaceous-brown; pleura yellow,

including the sternopleurite and meron, only the anepisternum a little more darkened; dorsopleural region infuscated. Legs with the coxae and trochanters light yellow; femora testaceous at base, passing into brown, the tips of the femora very narrowly and insensibly paling to dirty white; tibiae brownish black, the tips narrowly and insensibly paler, most conspicuous on the metatibia, where the entire distal third fades from brown to dirty white; tarsi of all legs chiefly white. Wings greyish, the brown pterostigma conspicuous, smaller than in *D. davidsoni* ALEX.; outer radial field only vaguely darkened; a very narrow dark seam on anterior cord; whitish areas before and beyond pterostigma small but conspicuous; longitudinal veins beyond cord, together with bscu, not seamed with brown, as in *D. davisoni*; elements of anterior cord, including Rs, in perfect transverse alignment; in *D. davidsoni* these are slightly oblique, with cell R5 lying a little more distad; R3 decurved outwardly, paralleling R4+5 throughout its length; bscu nearly its own length before fork of M; cell A2 a little wider than in *D. davidsoni*, vein A2 lying opposite midlength of basal section of Cu1. Halteres elongate, brownish black. Abdominal tergites almost uniformly brownish black, the lateral portions of the outer segments paler; sternites dark, the caudal margins of the outer segments conspicuously paler.

**Remarks:** The available material is insufficient for assessing similarity and affinities. It appears most likely that *D. segnis* is a member of the *D. niveitarsis* group of species. Diagnostic characters: possibly the colouration of the legs with the distal third of metatibia fading from brown to dirty white and the tarsi of all legs chiefly white.

**New records:** None.

**Distribution:** New South Wales (NEN); known only from Dorrigo.

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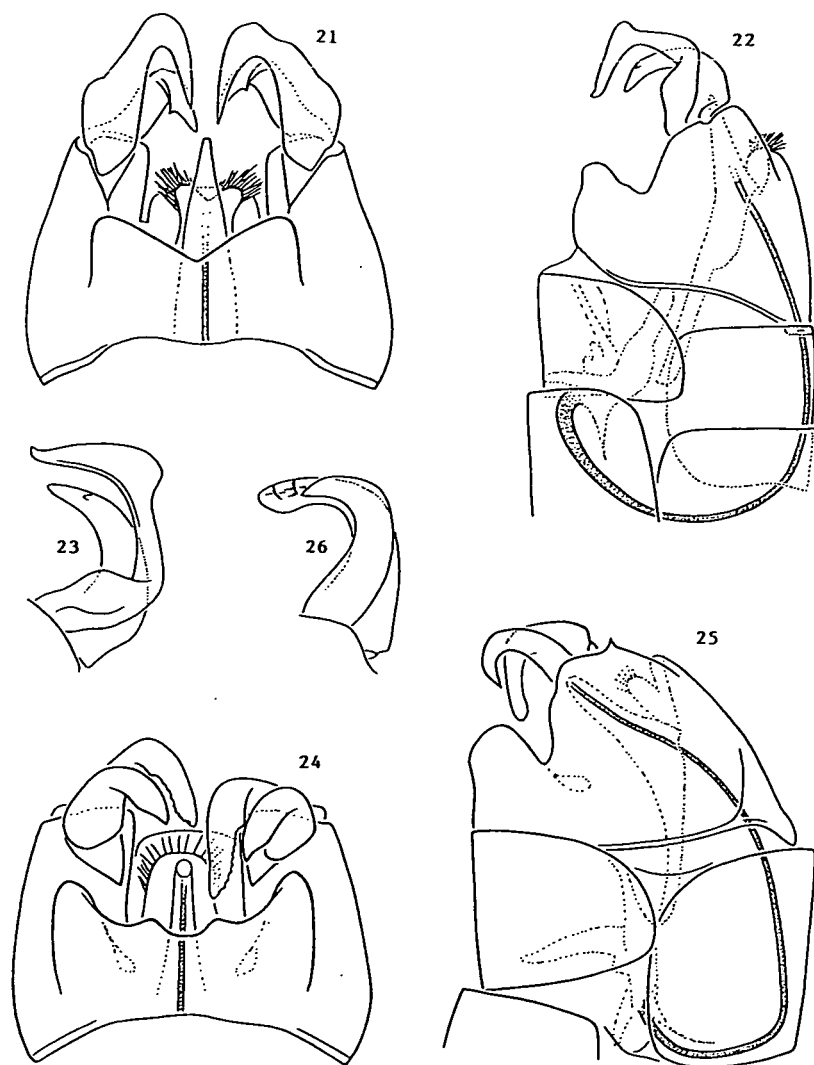
## Species Index

This alphabetical list includes all names of the species group (valid species and synonyms) in Australian *Dolichopeza*. Reference to the next higher ranking taxon (species group) as used in this paper is given by the following abbreviations:

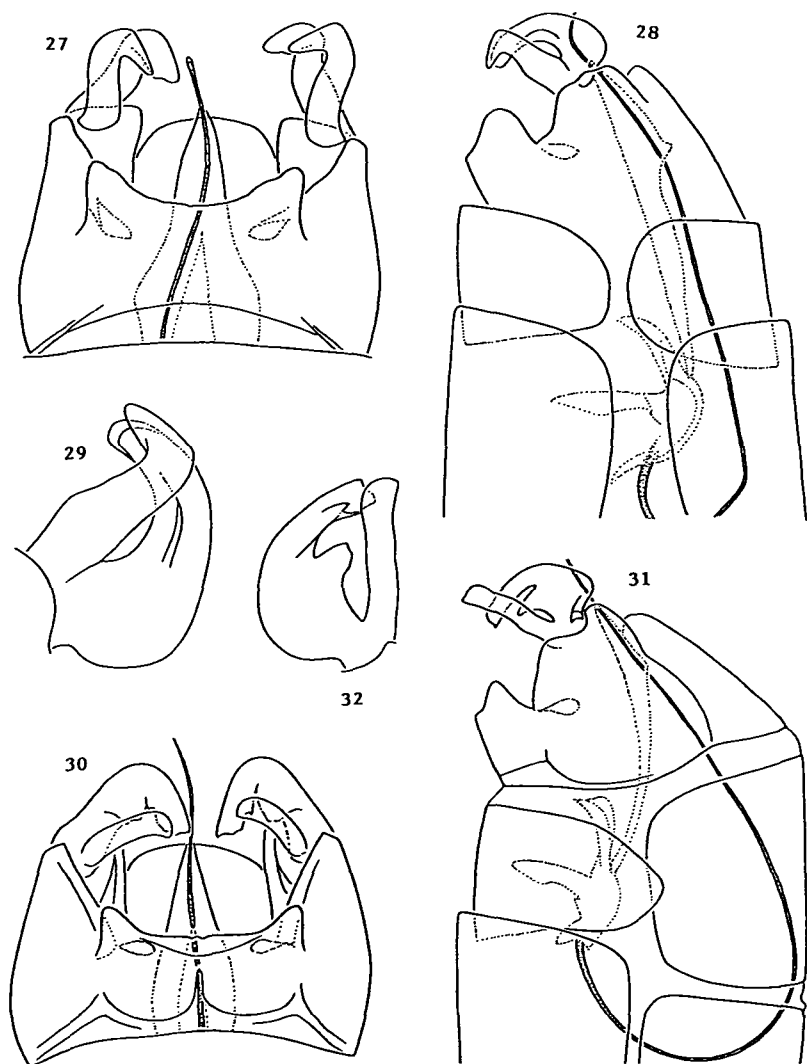
Dan *Dolichopeza* (*D.*) *annulipes* group  
 Dbr *Dolichopeza* (*D.*) *brevifurca* group  
 Dci *Dolichopeza* (*D.*) *cinerea* group  
 Dco *Dolichopeza* (*D.*) *collessi* group  
 Ddn *Dolichopeza* (*D.*) *danbulla* group  
 Ddv *Dolichopeza* (*D.*) *davidsoni* group  
 Dfe *Dolichopeza* (*D.*) *ferox* group  
 Dni *Dolichopeza* (*D.*) *niveitarsis* group  
 Dva *Dolichopeza* (*D.*) *varipes* group  
 Dyo *Dolichopeza* (*D.*) *yourula* group  
 D?? *Dolichopeza* (*D.*) species of uncertain affinities

Reference is also given to the figure numbers in this paper (*italics*) and to the page numbers of the text (**bold**).

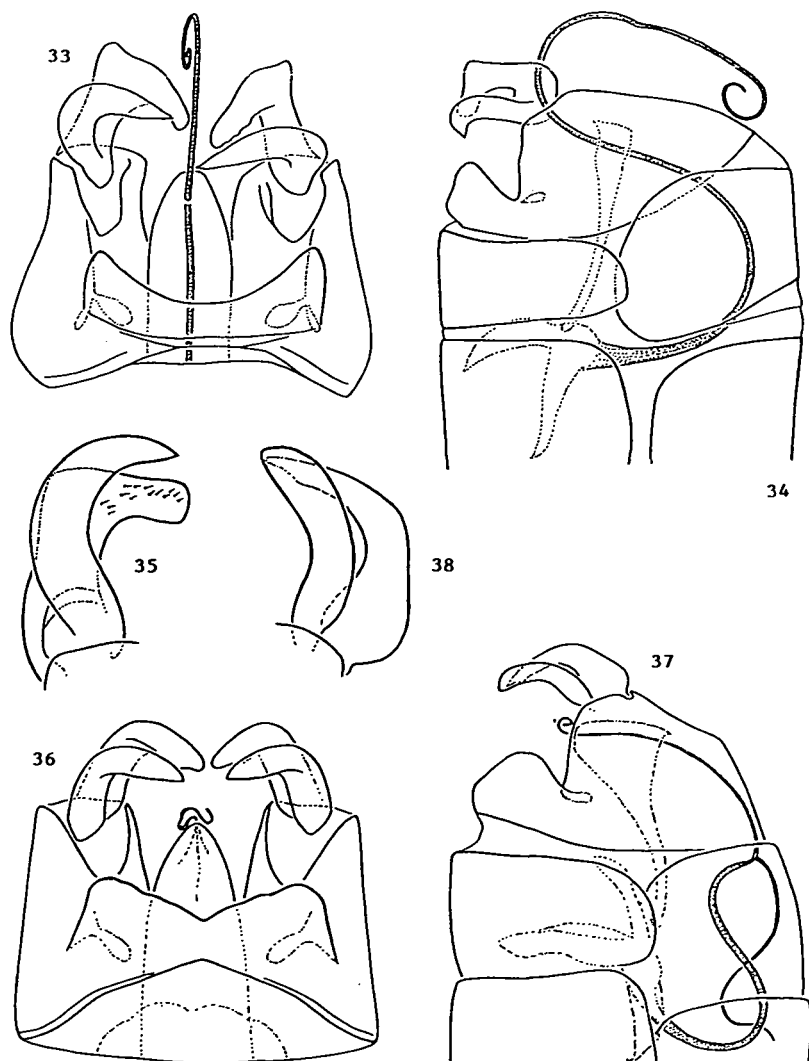
- |  |   |
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| <i>albescens</i> ALEX., Dbr, 20, 58-60, <b>856</b>     | <i>longidigitalis</i> ALEX. (= <i>cinerea</i> (MACQ.))  |
| <i>annulipes</i> SKUSE, Dan, 21-23, <b>844</b>         | <i>longifurca</i> SKUSE, Dci, 91-93, <b>866</b>         |
| <i>asymmetrica</i> n. sp., Dni, 113-115, <b>874</b>    | <i>minnamurra</i> n. sp., Dva, 18, 79-81, <b>862</b>    |
| <i>ballaratiensis</i> DOBR., Dni, 119-121, <b>876</b>  | <i>monticola</i> SKUSE, Dan, 46-48, <b>852</b>          |
| <i>berrimilla</i> n. sp., Dva, 73-75, <b>860</b>       | <i>nigrina</i> DOBR., Dni, 125, 126, <b>877</b>         |
| <i>bickeli</i> n. sp., Dan, 27-29, <b>846</b>          | <i>niveitarsis</i> SKUSE, Dni, 109-111, <b>872</b>      |
| <i>boogoo</i> n. sp., Dbr, 64-66, <b>858</b>           | <i>oresitropha</i> ALEX., Dan, 24-26, <b>845</b>        |
| <i>brevifurca</i> SKUSE, Dbr, 49-51, <b>854</b>        | <i>palliditarsis</i> ALEX., Dni, 112, <b>873</b>        |
| <i>cairnensis</i> ALEX., D??, 147, <b>884</b>          | <i>pallidula</i> ALEX., Dbr, 61-63, <b>857</b>          |
| <i>cinerea</i> (MACQ.), Dci, 85-87, <b>864</b>         | <i>planidigitalis</i> SKUSE, Dbr, 19, 55-57, <b>856</b> |
| <i>collessi</i> n. sp., Dco, 9, 141-143, <b>881</b>    | <i>pygmaea</i> ALEX., Dni, 131, <b>878</b>              |
| <i>corinnaiensis</i> DOBR., Dni, 122-124, <b>876</b>   | <i>queenslandica</i> ALEX., Dbr, 52-54, <b>855</b>      |
| <i>cyatheti</i> ALEX., Dni, 135-137, <b>880</b>        | <i>segnis</i> ALEX., D??, <b>885</b>                    |
| <i>danbulla</i> n. sp., Ddn, 13, 97-99, <b>868</b>     | <i>spetai</i> n. sp., Dan, 43-45, <b>851</b>            |
| <i>davidsoni</i> ALEX., Ddv, 11, 106-108, <b>871</b>   | <i>subannulipes</i> ALEX., Dan, 30-32, <b>847</b>       |
| <i>directa</i> n. sp., Dni, 127-130, <b>877</b>        | <i>subposticata</i> ALEX., Dni, 132-134, <b>879</b>     |
| <i>dorrigensis</i> ALEX., Dan, 39-41, <b>850</b>       | <i>thowla</i> n. sp., Dni, 16, 116-118, <b>857</b>      |
| <i>ferox</i> ALEX., D??, 10, 144-146, <b>883</b>       | <i>tropica</i> n. sp., Dan, 36-38, <b>849</b>           |
| <i>fuscoradialis</i> ALEX. (= <i>brevifurca</i> SKUSE) | <i>tylye</i> n. sp., Dci, 12, 88-90, <b>865</b>         |
| <i>geometrica</i> sp.n., Dan, 14, 33-35, <b>848</b>    | <i>varipes</i> SKUSE, Dva, 67-69, <b>859</b>            |
| <i>illingworthi</i> ALEX., Dva, 76-78, <b>861</b>      | <i>victoriae</i> ALEX., Dci, 94-96, <b>867</b>          |
| <i>kongoola</i> n. sp., Ddn, 103-105, <b>869</b>       | <i>yourula</i> n. sp., Dyo, 15, 82-84, <b>863</b>       |
| <i>kurandensis</i> ALEX., Dan, 42, <b>851</b>          | <i>zenta</i> n. sp., Ddn, 100-102, <b>869</b>           |



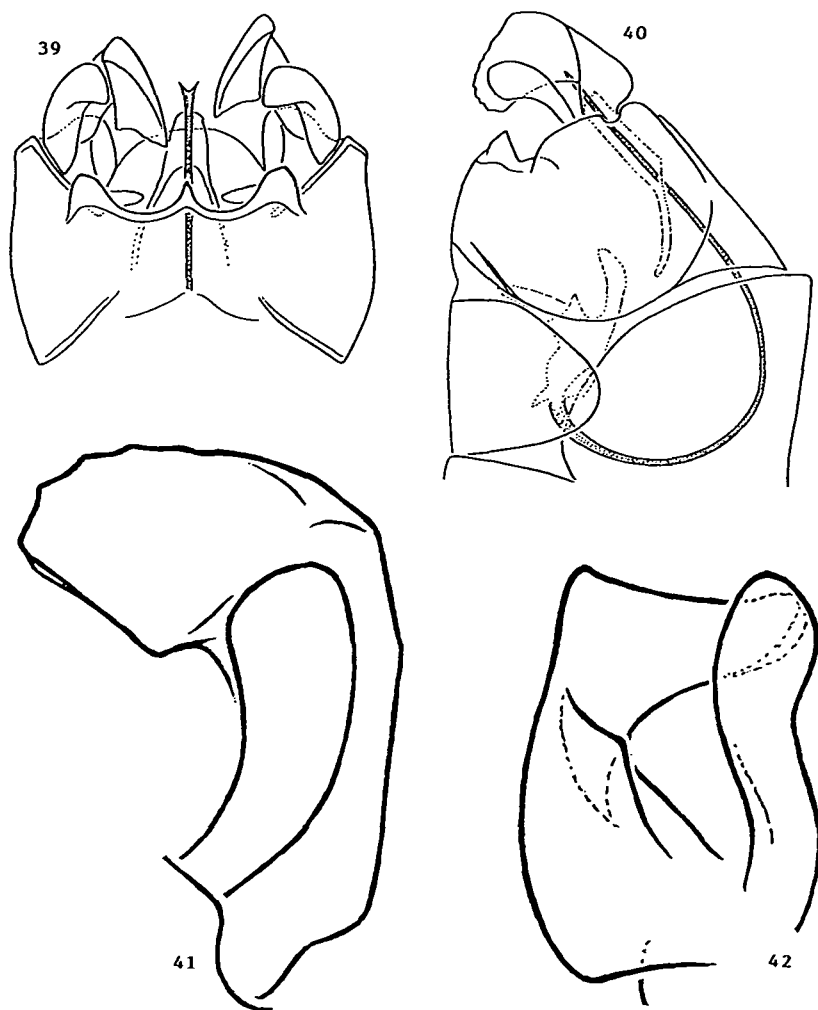
Figs 21-26. Male hypopygium of Australian *Dolichozepe* (*Dolichozepe*) species: 21-23, *annulipes* SKUSE: 21, dorsal aspect; 22, lateral aspect; 23, left gonostyli; 24-26, *oresitropa* ALEX.: 24, dorsal aspect; 25, lateral aspect; 26, left gonostyli.



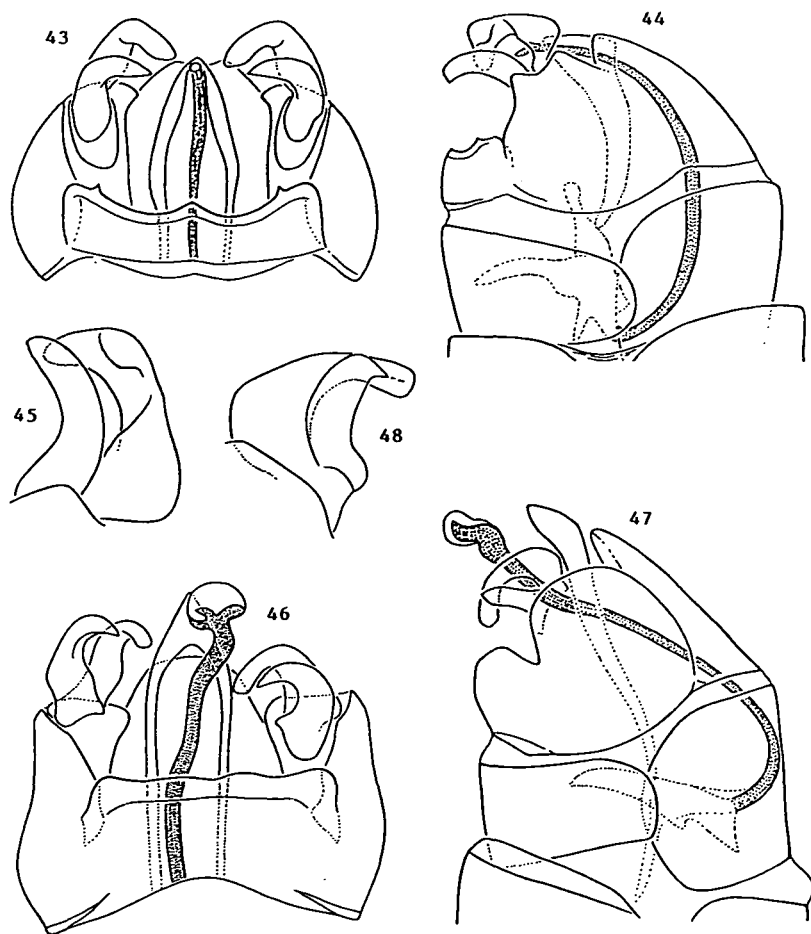
Figs 27-32. Male hypopygium of Australian *Dolichocheza* (*Dolichocheza*) species: 27-29, *bickeli* n. sp.: 27, dorsal aspect; 28, lateral aspect; 29, left gonostyli; 30-32, *subannulipes* ALEX., with about 50% (distal half) of aedeagus omitted: 30, dorsal aspect; 31, lateral aspect; 32, right gonostyli.



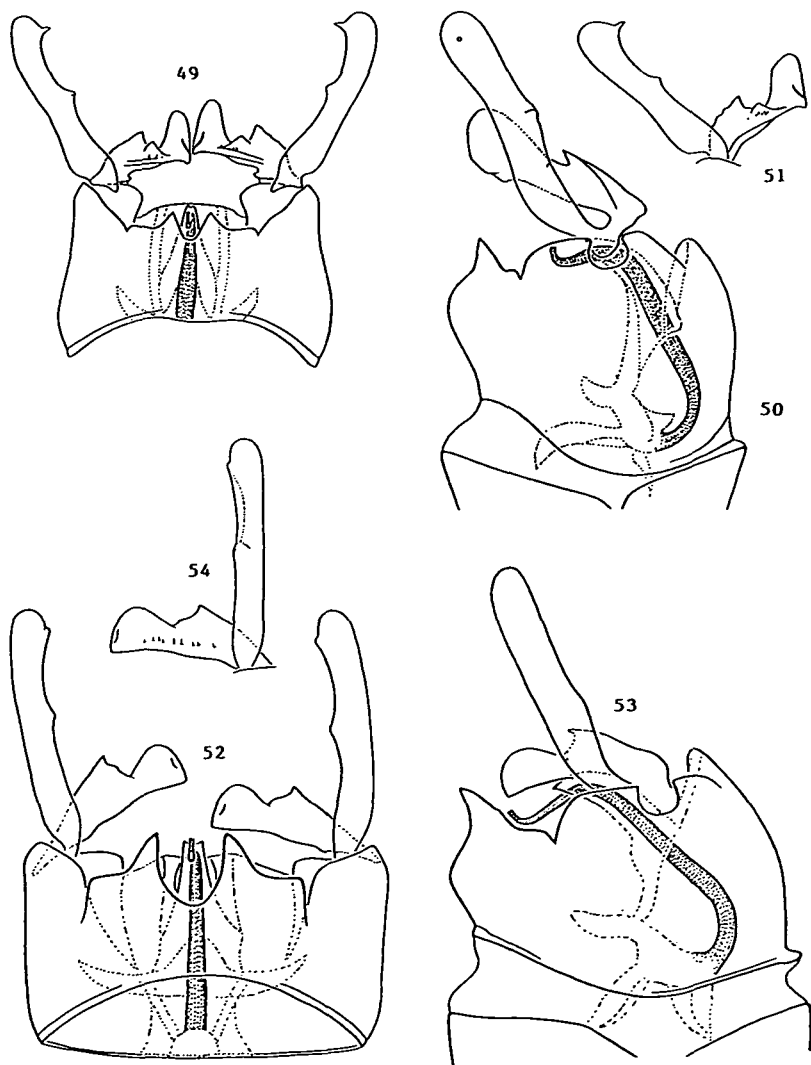
Figs 33-38. Male hypopygium of Australian *Dolichocheza* (*Dolichocheza*) species: 33-35, *geometrica* n. sp.: 33, dorsal aspect; 34, lateral spect; 35, right gonostyli; 36-38, *tropica* n. sp.: 36, dorsal aspect; 37, lateral aspect; 38, left gonostyli.



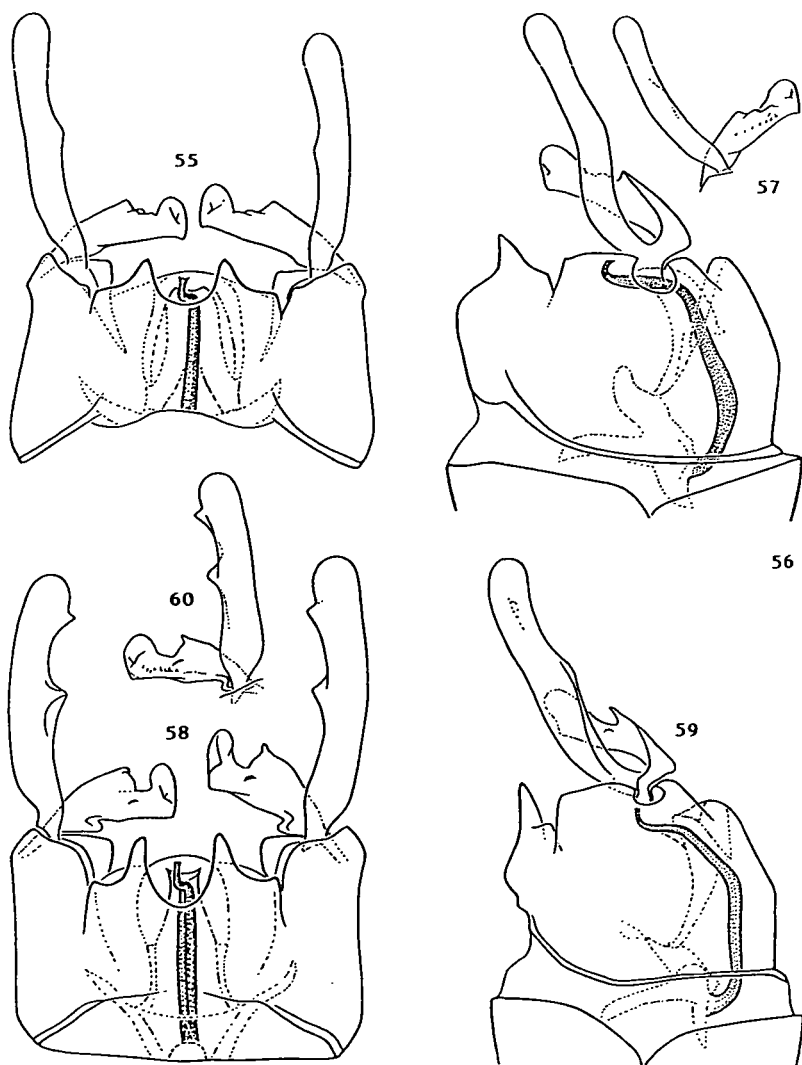
Figs 39–42. Male hypopygium of Australian *Dolichopeza* (*Dolichopeza*) species: 39–41, *dorrigensis* ALEX.: 39, dorsal aspect; 40, lateral aspect; 41, left gonostyli; 42, *kurandensis* ALEX., right gonostyli (from holotype slide).



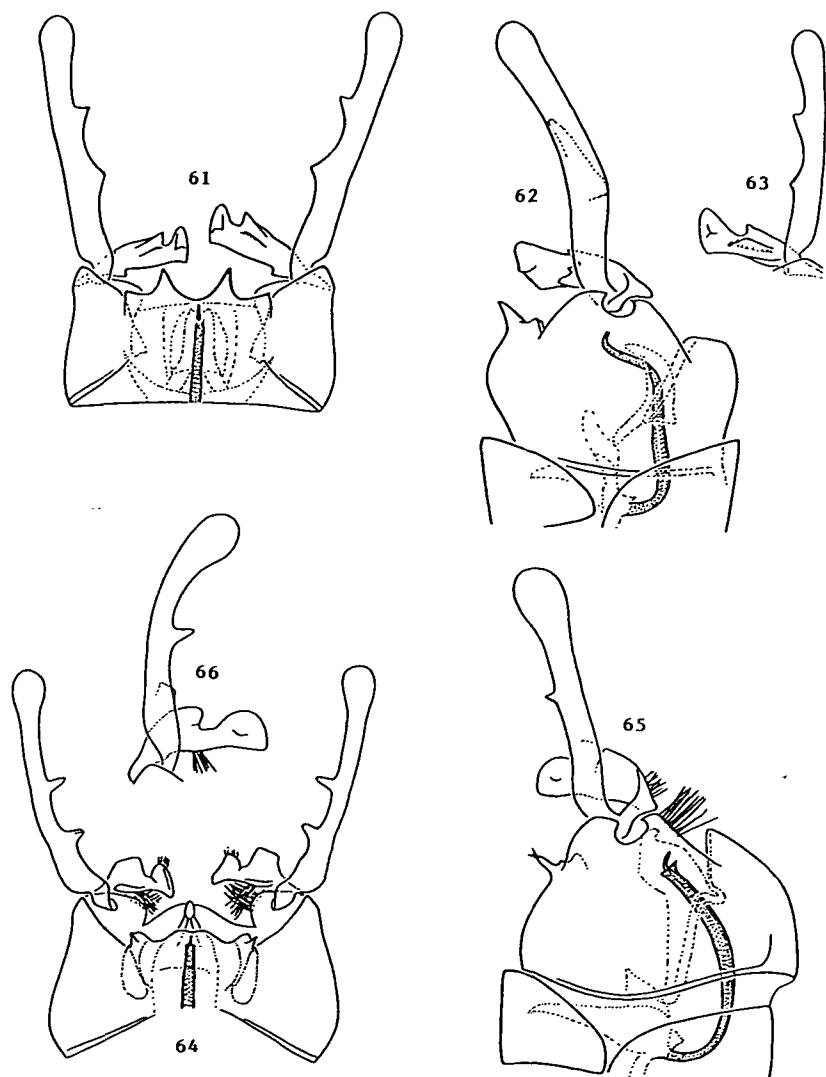
Figs 43-48. Male hypopygium of Australian *Dolichopeza* (*Dolichopeza*) species: 43-45, *spetai* n. sp.: 43, dorsal aspect; 44, lateral aspect; 45, left gonostyli; 46-48, *monticola* SKUSE: 46, dorsal aspect; 47, lateral aspect; 48, right gonostyli.



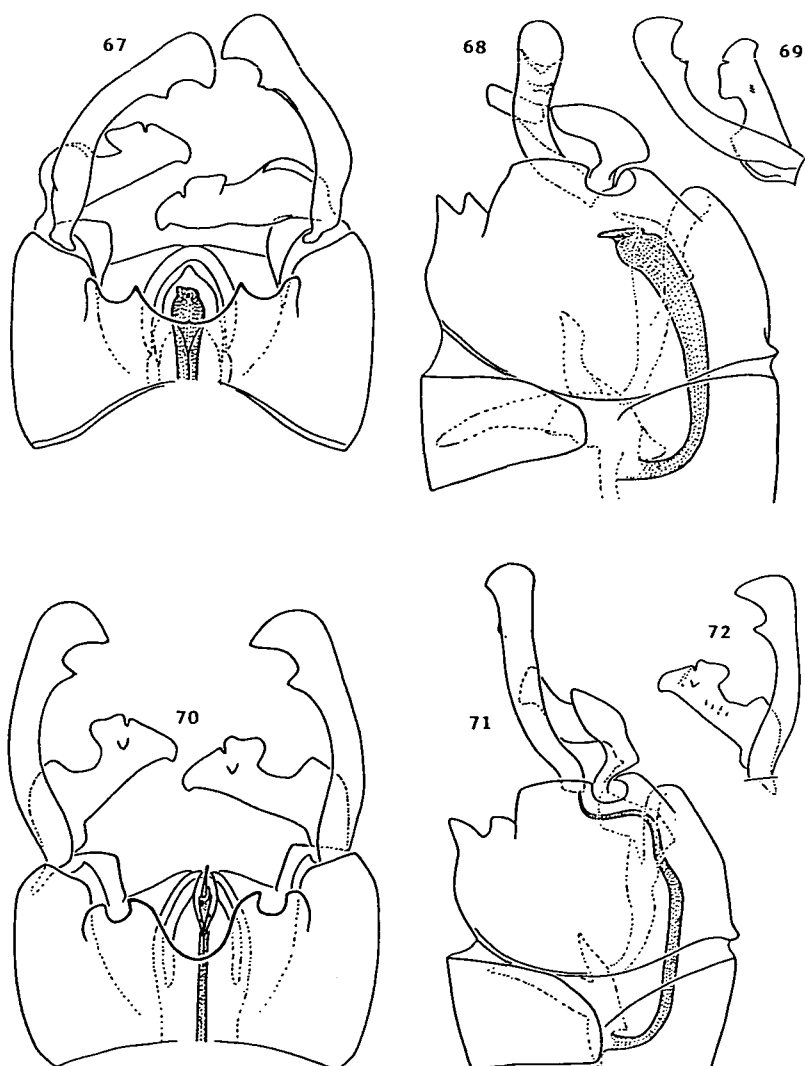
Figs 49-54. Male hypopygium of Australian *Dolichocheza* (*Dolichocheza*) species: 49-51, *brevifurca* SKUSE: 49, dorsal aspect; 50, lateral aspect; 51, right gonostyli; 52-54, *queenslandica* ALEX.: 52, dorsal aspect; 53, lateral aspect; 54, left gonostyli.



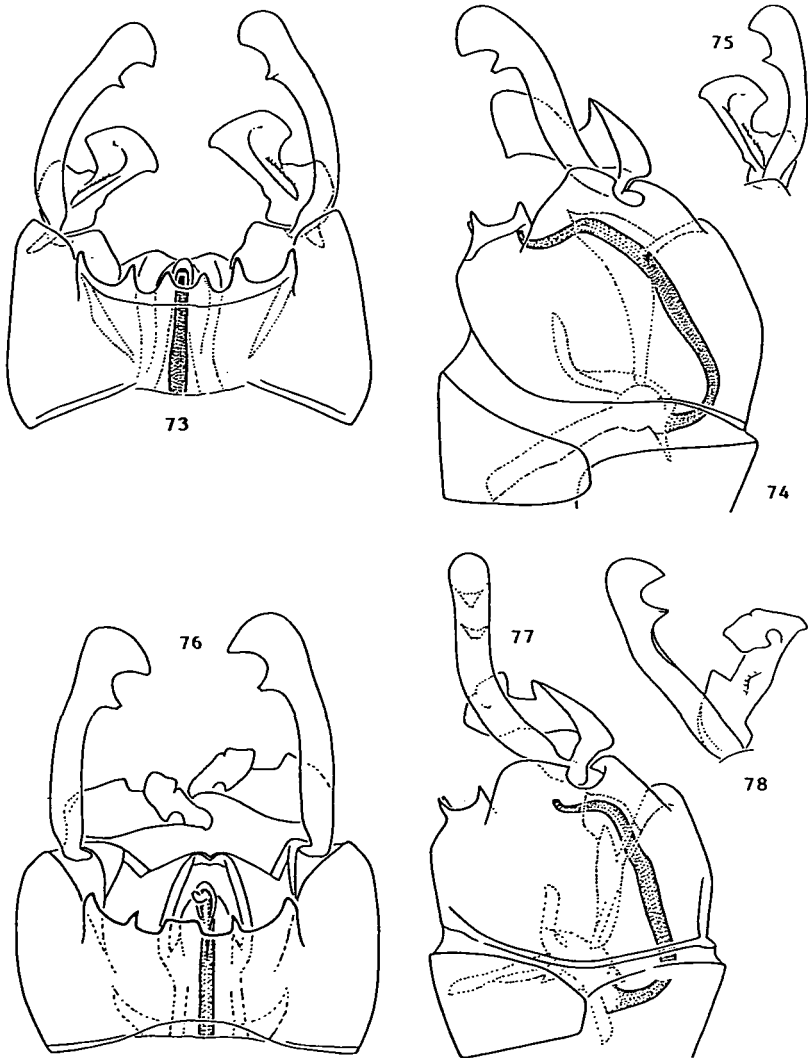
Figs 55-60. Male hypopygium of Australian *Dolichozepe* (*Dolichozepe*) species: 55-57, *planidigitalis* SKUSE: 55, dorsal aspect; 56, lateral aspect; 57, right gonostyli; 58-60, *albescens* ALEX.: 58, dorsal aspect; 59, lateral aspect; 60, left gonostyli.



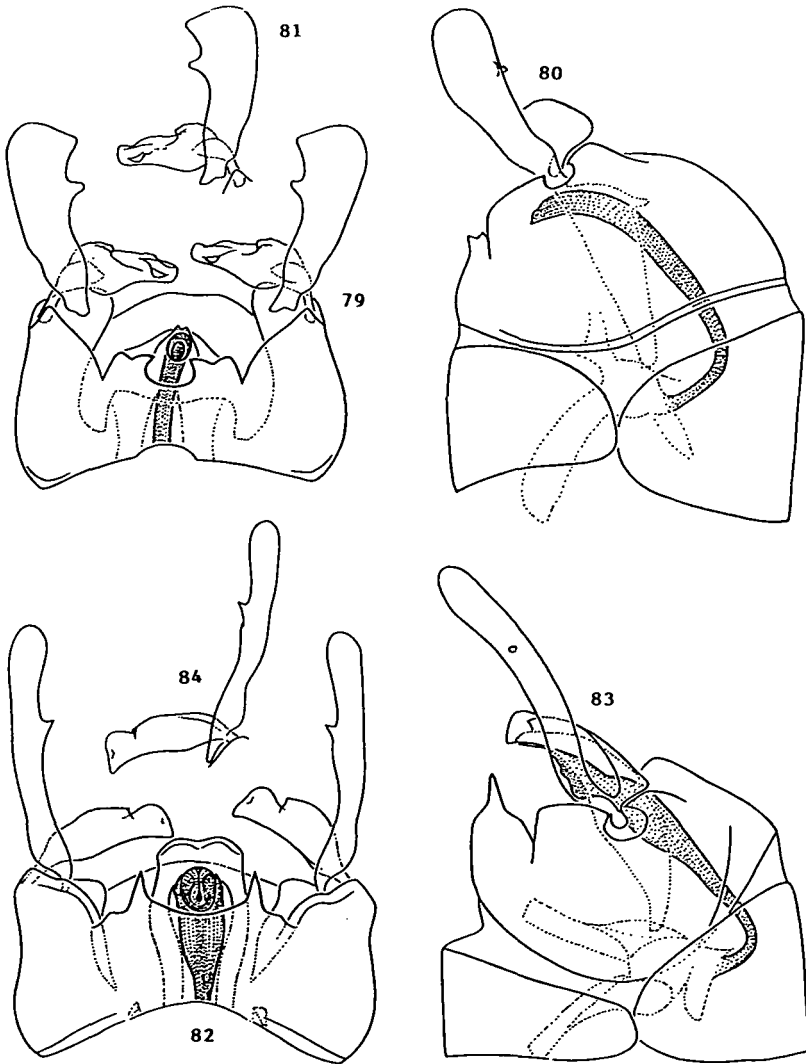
Figs 61-66. Male hypopygium of Australian *Dolichozepe* (*Dolichozepe*) species: 61-63, *pallidula* ALEX.: 61, dorsal aspect; 62, lateral aspect; 63, left gonostyli; 64-66, *boogoo* n. sp.: 64, dorsal aspect; 65, lateral aspect; 66, right gonostyli.



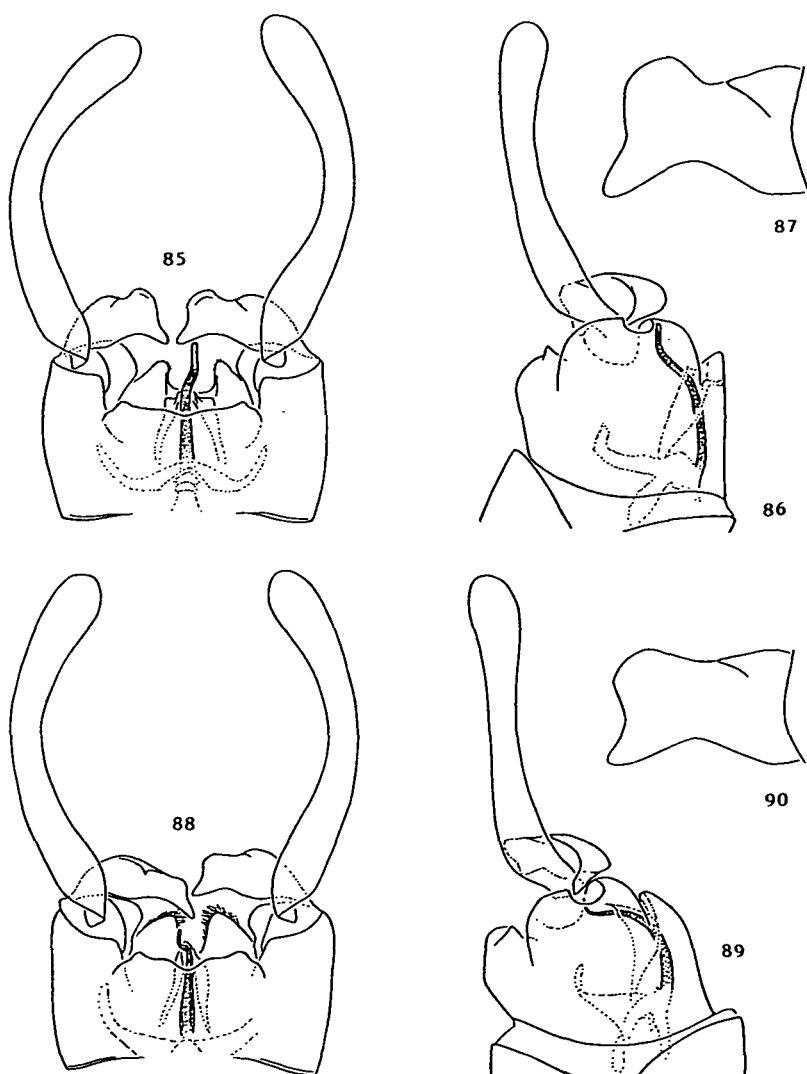
Figs 67-72. Male hypopygium of Australian *Dolichozepe* (*Dolichozepe*) species: 67-69, *varipes* SKUSE: 67, dorsal aspect; 68, lateral aspect; 69, right gonostyli; 70-72, *leonardi* n. sp.: 70, dorsal aspect; 71, lateral aspect; 72, left gonostyli.



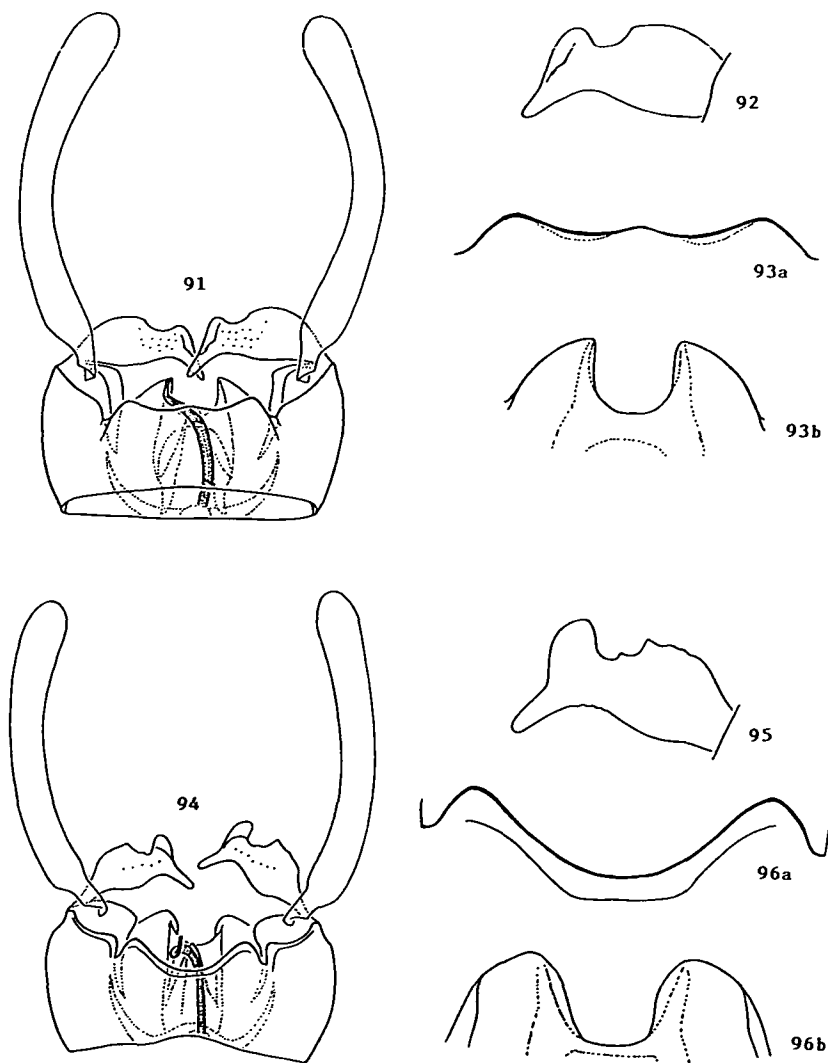
Figs 73-78. Male hypopygium of Australian *Dolichozepe* (*Dolichozepe*) species: 73-75, *berrimilla* sp.n.: 73, dorsal aspect; 74, lateral aspect; 75, left gonostyli; 76-78, *illingworthi* ALEX.: 76, dorsal aspect; 77, lateral aspect; 78, right gonostyli.



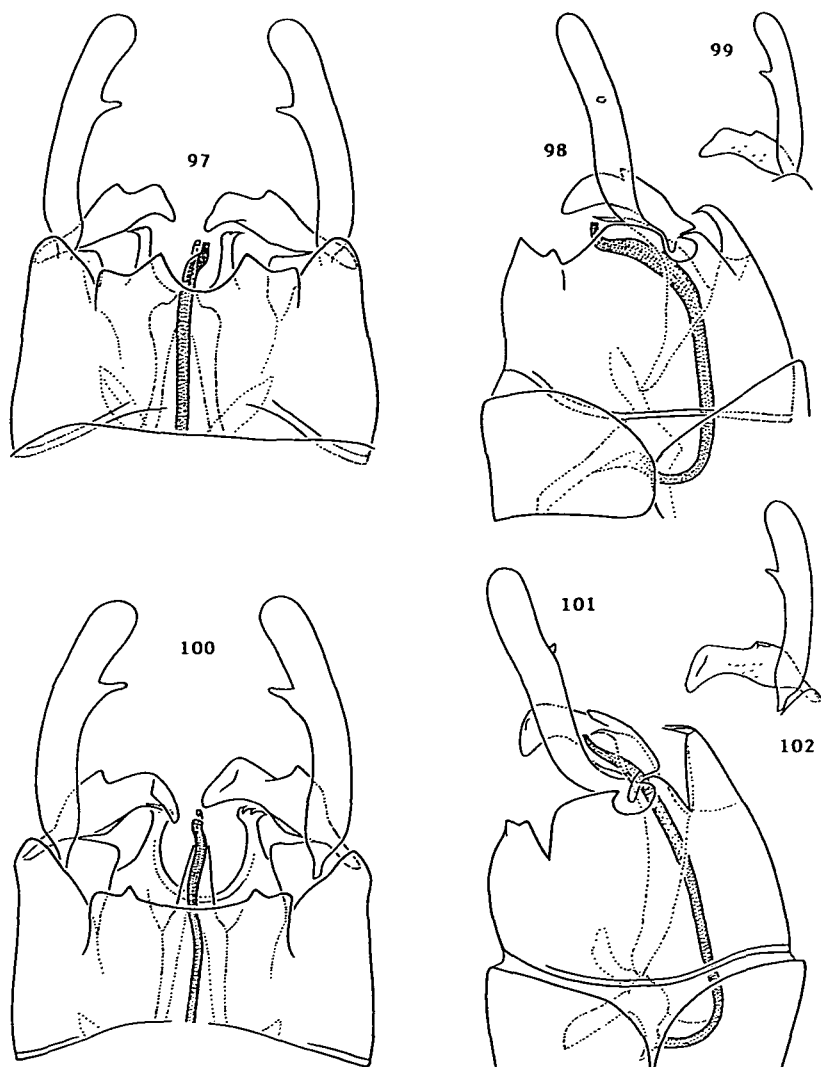
Figs 79-84. Male hypopygium of Australian *Dolichozepe* (*Dolichozepe*) species: 79-81, *minnamurra* n. sp.: 79, dorsal aspect; 80, lateral aspect; 81, left gonostyli; 82-84, *yourula* n. sp.: 82, dorsal aspect; 83, lateral aspect; 84, left gonostyli.



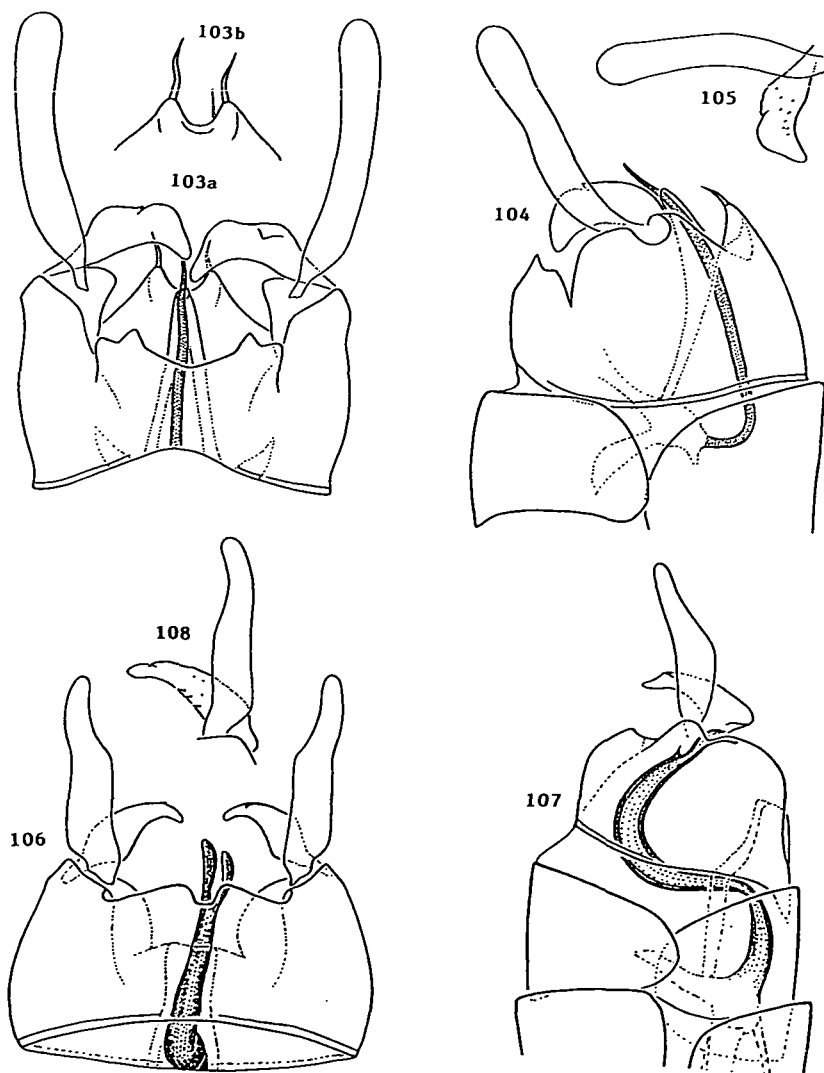
Figs 85-90. Male hypopygium of Australian *Dolichocheza* (*Dolichocheza*) species: 85-87, *cinerea* (MACQ.): 85, dorsal aspect; 86, lateral aspect; 87, distal portion of left inner gonostylus; 88-90, *tylye* n. sp.: 88, dorsal aspect; 89, lateral aspect; 90, distal portion of left inner gonostylus.



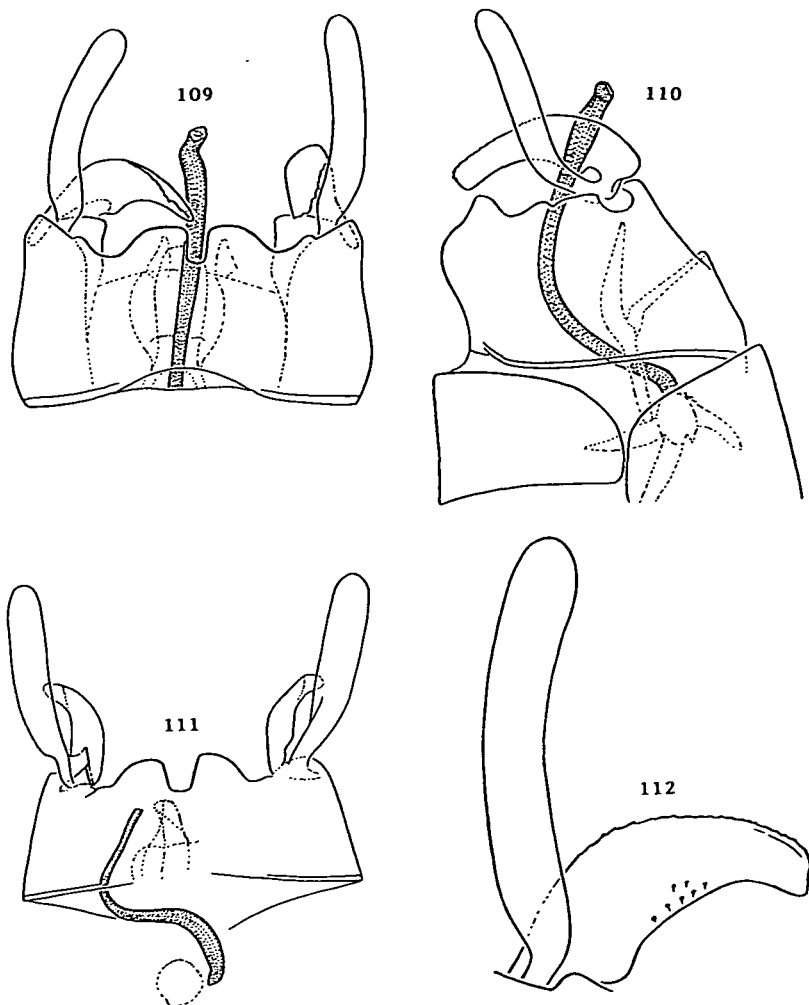
Figs 91-96. Male hypopygium of Australian *Dolichopeza* (*Dolichopeza*) species: 91-93, *longifurca* SKUSE: 91, dorsal aspect; 92, left inner gonostylus; 93a, posterior margin of tergite 9; 93b, posterior lobes of sternite 9; 94-96, *victoriae* ALEX.: 94, dorsal aspect; 95, left inner gonostylus; 96a, posterior margin of tergite 9; 96b, posterior lobes of sternite 9.



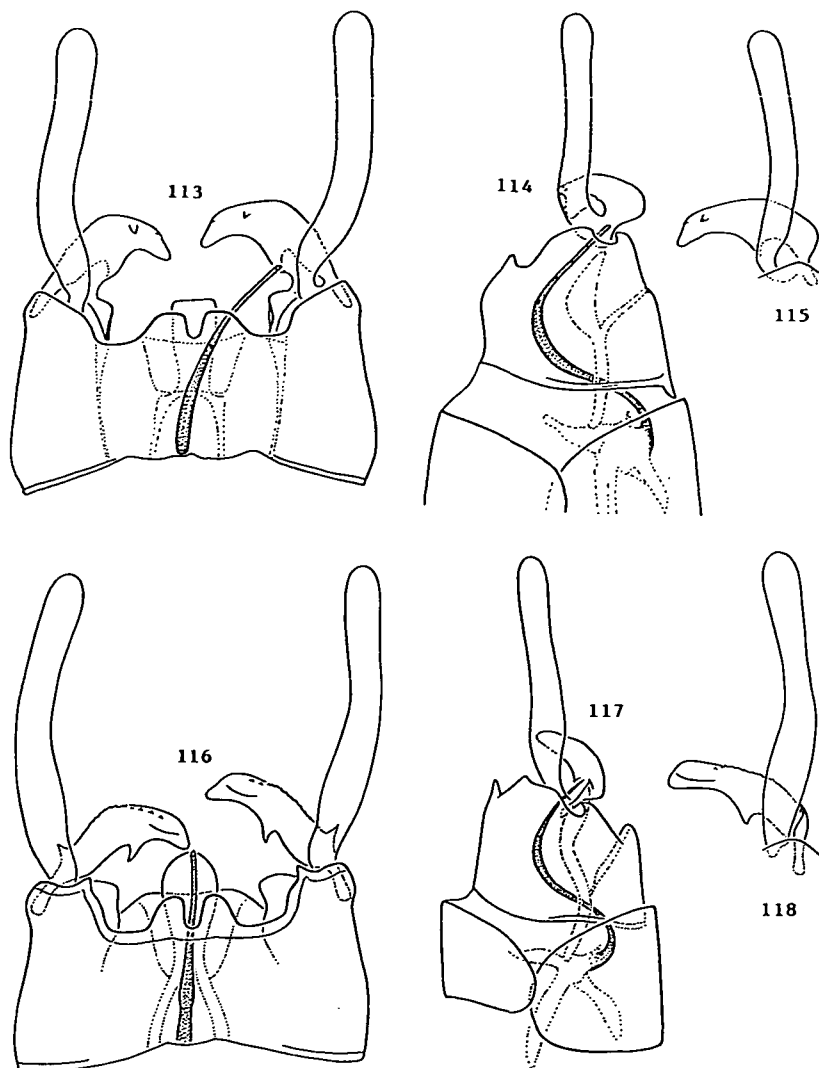
Figs 97-102. Male hypopygium of Australian *Dolichozepe* (*Dolichozepe*) species: 97-99, *danbulla* n. sp.: 97, dorsal aspect; 98, lateral aspect; 99, left gonostyli; 100-102, *zenta* n. sp.: 100, dorsal aspect; 101, lateral aspect; 102, left gonostyli.



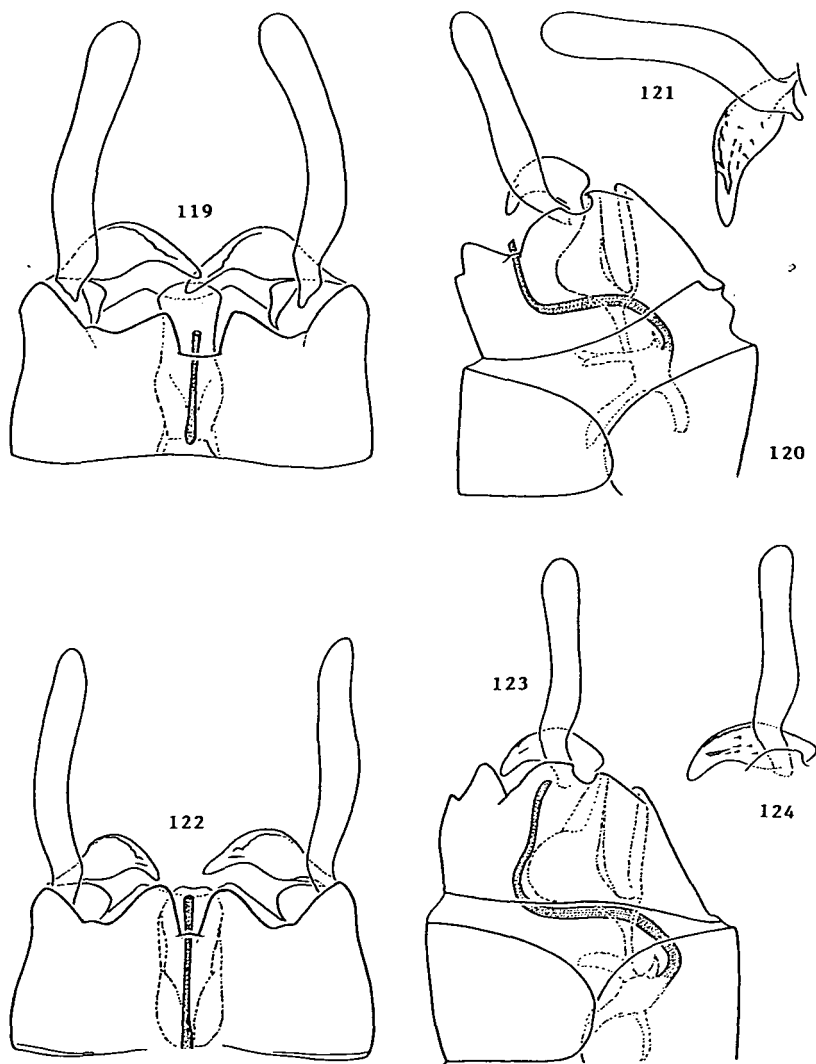
Figs 103-108. Male hypopygium of Australian *Dolichozepe* (*Dolichozepe*) species: 103-105, *kongoola* n. sp.: 103a, dorsal aspect; 103b, posterior lobes of sternite 9; 104, lateral aspect; 105, left gonostyli; 106-108, *davidsoni* ALEX.: 106, dorsal aspect; 107, lateral aspect; 108, left gonostyli.



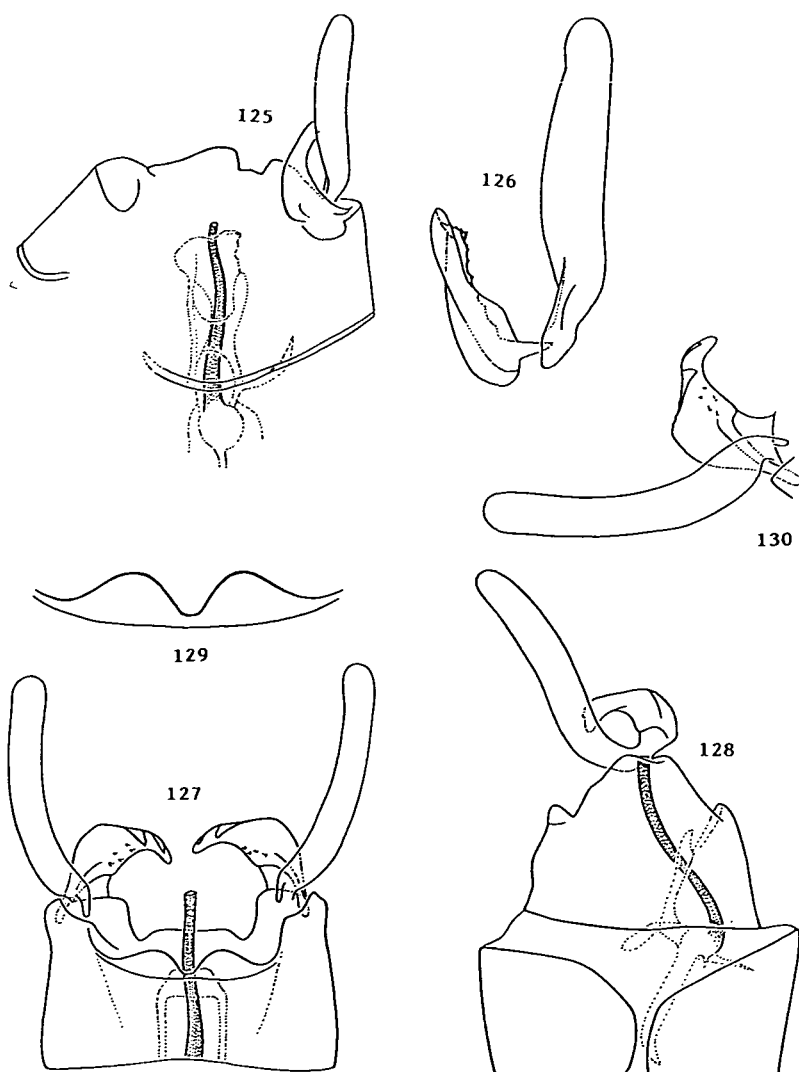
Figs 109-112. Male hypopygium of Australian *Dolichocheza* (*Dolichocheza*) species: 109-111, *niveitarsis* SKUSE: 109, dorsal aspect; 110, lateral aspect; 111, right gonostyli; 112, *palliditarsis* ALEX., dorsal aspect (from paratype slide).



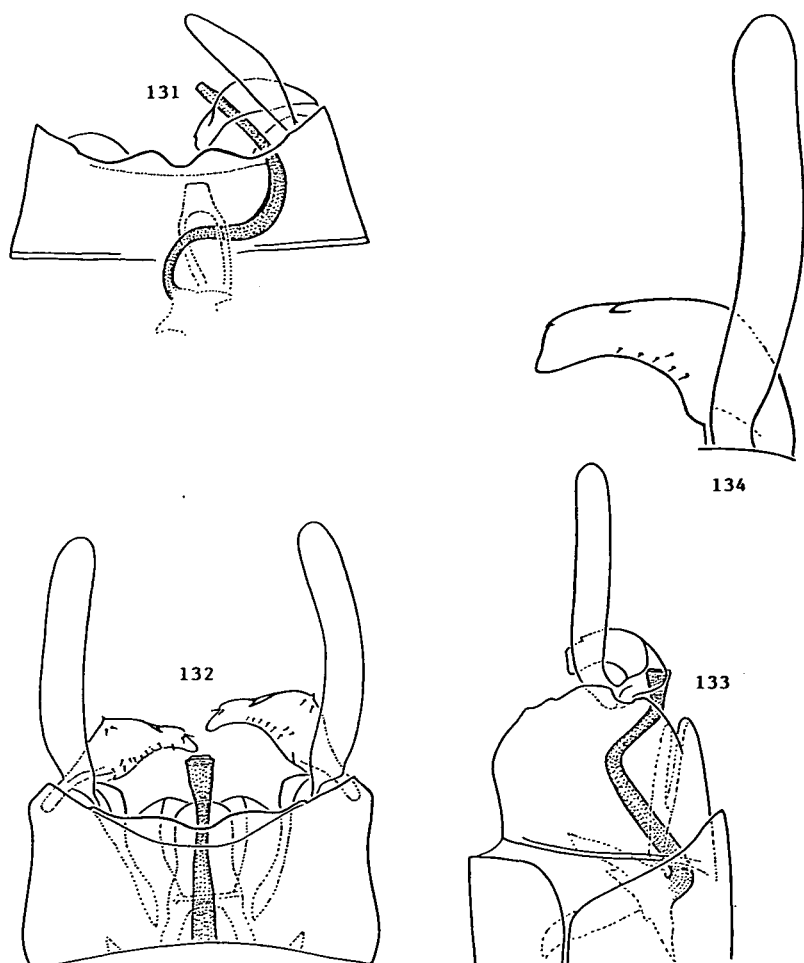
Figs 113-118. Male hypopygium of Australian *Dolichozepe* (*Dolichozepe*) species: 113-115, *asymmetrica* n. sp.: 113, dorsal aspect; 114, lateral aspect; 115, left gonostyli; 116-118, *thowla* n. sp.: 116, dorsal aspect; 117, lateral aspect; 118, left gonostyli.



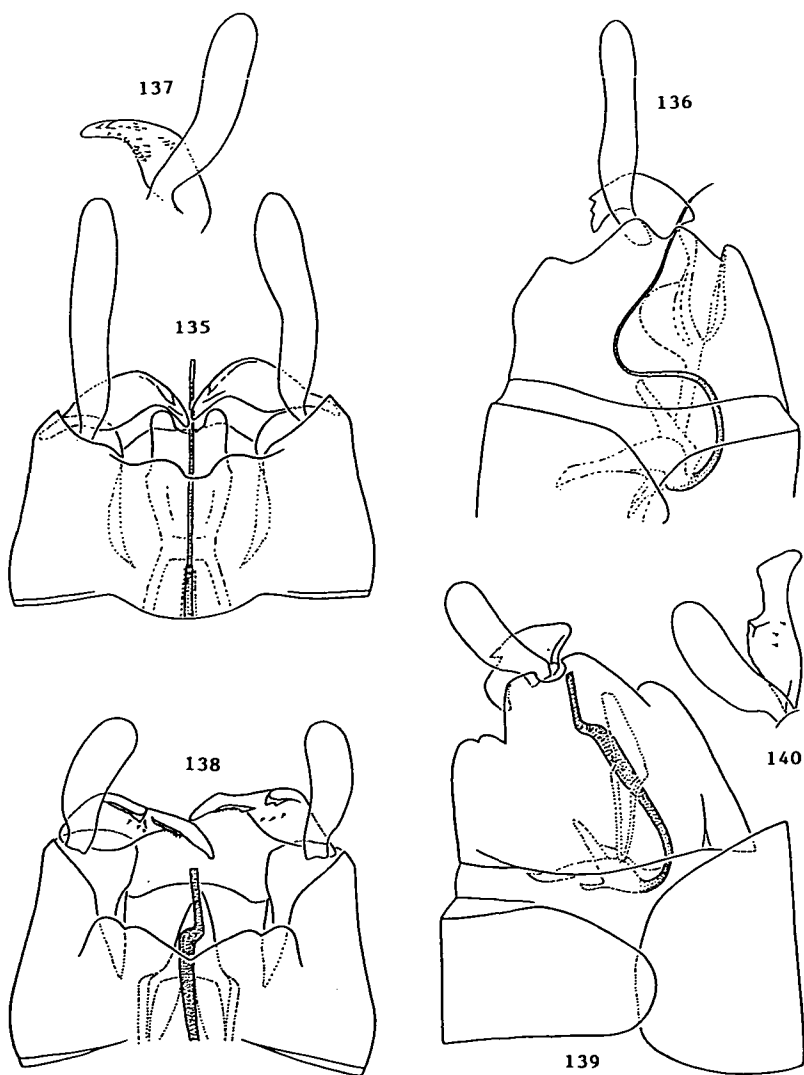
Figs 119-124. Male hypopygium of Australian *Dolichozepe* (*Dolichozepe*) species: 119-121, *ballaratiensis* DOBR.: 119, dorsal aspect; 120, lateral aspect; 121, left gonostyli; 122-124, *corinnaiensis* DOBR.: 122, dorsal aspect; 123, lateral aspect; 124, left gonostyli.



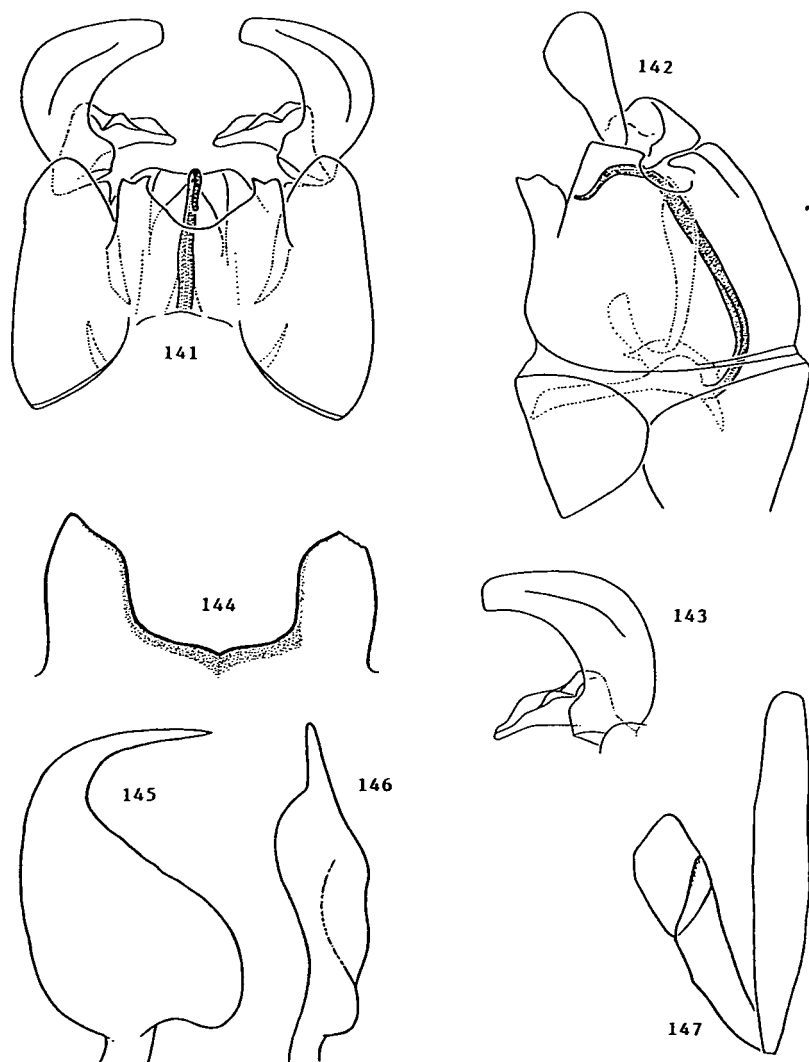
Figs 125-130. Male hypopygium of Australian *Dolichozepe* (*Dolichozepe*) species: 125, 126, *nigrina* DOBR.: 125, ventral aspect (from holotype slide); 126, left gonostyli; 127-130, *directa* n. sp.: 127, dorsal aspect; 128, lateral aspect; 129, posterior margin of tergite 9; 130, left gonostyli.



Figs 131-134. Male hypopygium of Australian *Dolichocheza* (*Dolichocheza*) species: 131, *pygmaea* ALEX., dorsal aspect (from holotype slide); 132-134, *subposticata* ALEX.: 132, dorsal aspect; 133, lateral aspect; 134, left gonostyli.



Figs 135-140. Male hypopygium of Australian *Dolichozepe* (*Dolichozepe*) species: 135-137, *cyatheti* ALEX.: 135, dorsal aspect; 136, lateral aspect; 137, left gonostyli; 138-140, *aequalis* n. sp.: 138, dorsal aspect; 139, lateral aspect; 140, right gonostyli.



Figs 141-147. Male hypopygium of Australian *Dolichozepe* (*Dolichozepe*) species: 141-143, *collessi* n. sp.: 141, dorsal aspect; 142, lateral aspect; 143, left gonostyli; 144-146, *ferox* ALEX.: 144, posterior portion of tergite 9 (broken); 145, 146, outer gonostylus (two different aspects); 147, *cairnensis* ALEX., gonostyli (simplified from DOBROTWORSKY 1974).